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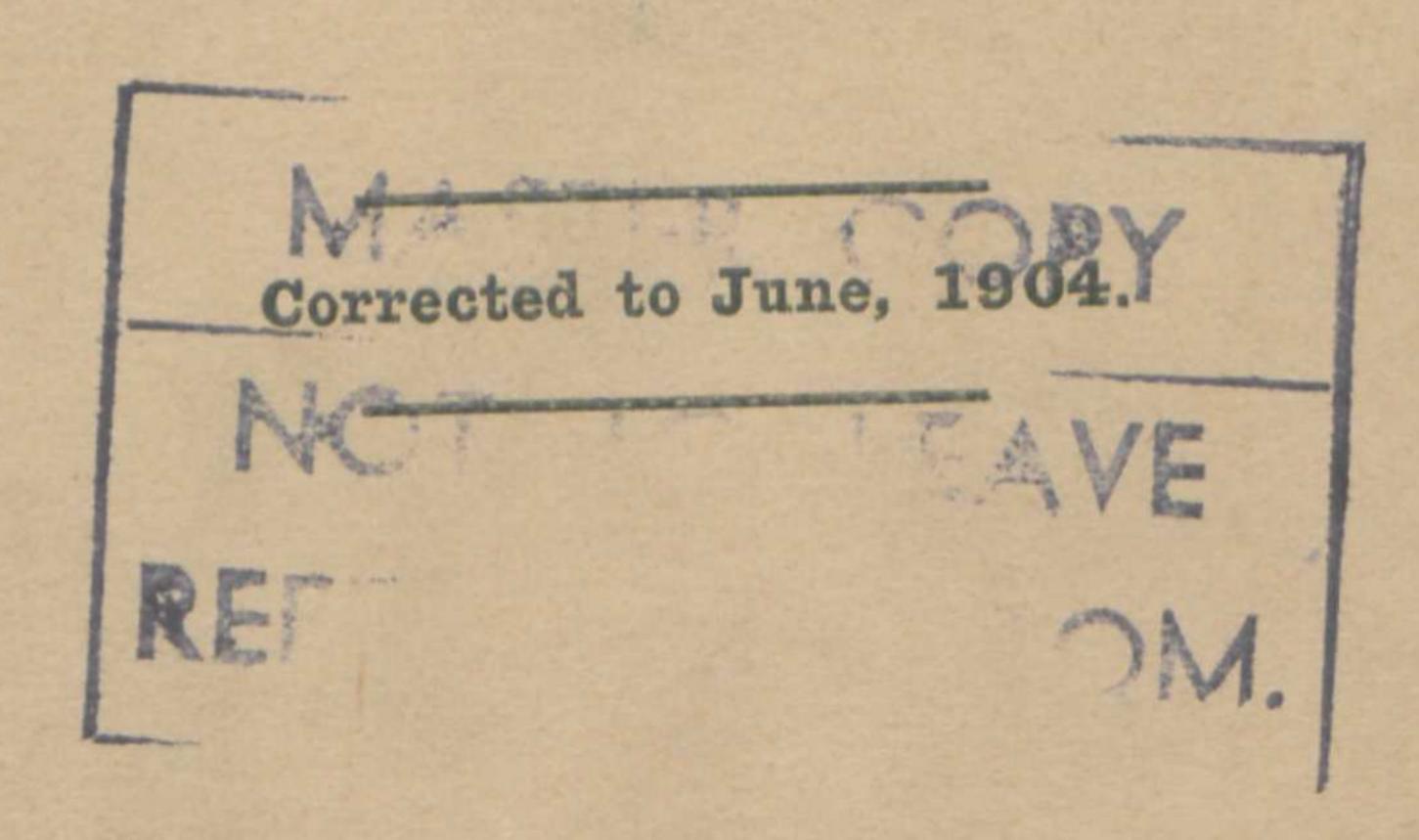
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ON

GERMAN SOUTH-WEST AFRICA

Compiled in the Intelligence Department, War Office, in 1903.

BY

MAJOR D. J. M. FASSON, D.A.Q.M.G.



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Compiled in the Intelligence Department, War Office, in 1903.

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MAJOR D. J. M. FASSON, D.A.Q.M.G.

Corrected to June, 1904.

PREFACE.

Since the First Edition of this Report was compiled a considerable amount of additional and reliable information has been obtained, thus rendering necessary the issue of a revised edition.

It is hoped that anyone who may acquire further information regarding the country dealt with will communicate with this Department.

The General Staff,
War Office,

3rd August, 1904.

J. M. GRIERSON,

Major-General,

D.M.O.

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CHAPTER IV. Page ETHNOGRAPHY. Hottentots Bushmen 58 Bastards 58 Bergdamaras 59 Hereros Ovampos (Ovambos) CHAPTER MILITARY AND POLICE FORCES. 62 Conditions of Service Administration 63 Intendance -Rates of Pay Pensions 64 Leave of Absence 64 Uniform 64 Equipment -Armament -65 Remounts 65 Organisation 66 Distribution 66 Strength Native Troops Police Force Reservists and Settlers Arming of Natives 68 Supplies and Ammunition 68 Defences APPENDICES. List of some Wasserstellen (watering places) and Springs - - I. Population Statistics - -List of Trading Firms and Companies - III. Table of Routes and Distances -Road and Railway Reports - -List of principal Authorities consulted - VI. The following maps will be found in the pocket:-Sketch map of the colony, showing most of the places mentioned in the body of the report. Map of the Swakop Valley. Windhoek. " Swakopmund. Langhans' Deutscher Kolonial-Atlas No. 16 is also re-

The spelling of names of places varies very much in the different books consulted, and on the different maps. In this report it has been made as far as possible to agree with that on the sketch map.

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GERMAN SOUTH-WEST AFRICA.

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CHAPTER I.

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HISTORY, PHYSICAL GEOGRAPHY, POLITICAL GEOGRAPHY.

To the Portuguese is attributed the discovery of History. South-West Africa in 1485, but it is not till about the middle of the eighteenth century that there is any record of European enterprise in the country. From 1760 onwards there have been many expeditions undertaken by men of various nationalities, and with a variety of different objects, such as elephant-hunting and the search for gold and copper. The birth of German influence in this part of Africa dates from the commencement of the nineteenth century, when the first German missionaries began to arrive: they did not confine themselves to missionary work, but proved themselves to be able traders and settlers, and by 1877 the large control they had obtained over the trade in Damaraland, and the extensive purchases of land they had made, began to attract attention. In March 1878, the British Government authorised the annexation of Walfisch Bay and a 15-mile circle of land round it.

In 1883 a German named Lüderitz sent his agents to the Bay of Angra Pequena, where they landed, and bought from the Hottentot chief of the district a tract of land 24 miles by 10 in area.

Communications had already been exchanged between the British and German Governments, and they continued at intervals, until finally, in June 1884, a German protectorate was declared over the territory, and was officially recognised by England. The subsequent history of German South-West Africa may be briefly described as a steady extension of Lüderitz's Angra Pequena settlement, at first by himself, later by the German Kolonial Gesellschaft, with, in the beginning, only a moderate support from the German Government, which, however, became more pronounced as time went on. The result of this extension is the German South-West Africa of to-day.

On the whole, the Germans have not, until recently, experienced any great difficulties in their intercourse with the natives of the northern portion of the territory, their most important opponent, against whom during many years they had a hard struggle, being Witbooi the Hottentot chief in the southern part of the colony.

A serious check in the progress of colonisation occurred in 1888. The difficulties arose from an unbusinesslike habit of some of the native chiefs of selling land or making concessions of mining and other rights, which, by some previous treaty, they had already disposed of to other parties, and from the somewhat audacious efforts of an Englishman called Lewis, who, acting entirely on his own authority and without support from the British Government, entered into hostile competition with the German colonists. The troubles culminated in a meeting of the German Administrator, the native chiefs, and Lewis, in October 1888, at which force majeure asserted its power and caused the German Administrator to withdraw without delay to Walfisch Bay. To restore German rule Major François was sent from Germany with a party of 21 men, and he landed at Walfisch Bay in June 1889. He marched into the disturbed provinces, and by bold and vigorous action (possibly somewhat high-handed as regards his treatment of certain English traders) he succeeded in his distinctly difficult task, made the more difficult by the hampering instructions of the German Government.

It is during the next five years that the previously-mentioned long and hard struggle between the chief Witbooi and the Germans took place, and little progress in colonisation was made. Major François up to 1893, and then Major von Leutwein, with a force finally in-

creased to 300 men and two guns, waged a continuous war against him, but it was only in September 1894, after a severe defeat, that he finally submitted to German rule, since which time he has been a loyal subject, helping the Germans in their operations against other tribes which have been from time to time necessary. He receives an annual subsidy of about £200.

Between 1894 and 1903 good progress was made in the development of the colony, but it has recently received a second most serious check.

In October 1903 the Bondelzwart tribe, which is located in the south-east of the colony, broke out in rebellion, and attacked Warmbad and some of the smaller posts near the Orange River. The bulk of the troops in the colony were sent south to quell this rising, which they did without much difficulty. While the troops were still absent from their stations in the north a sudden and unexpected rising of the Hereros occurred. This tribe is located for the most part in the Swakop valley and in the country to the north of it. The Hereros massacred about 100 settlers, destroyed railway stations, burnt farms, and besieged Omaruru, Okahandya, and Windhoek. Reinforcements to the number of 1,400 were despatched from Germany, and some men and guns landed from the German gunboat Habicht, but, before the arrival of the former, the return of a portion of the troops from the south enabled the above-mentioned places to be relieved after they had been cut off for about three weeks. Operations are still in progress, and so far the Germans have not met with much success. It is considered not unlikely that the Ovambos may join in with the Hereros. Further reinforcements have been sent from Germany, and in June of this year there were about 6,500 of all ranks and 62 guns in the colony.

A British officer, who visited the country in 1903, before the native risings occurred, reported as follows on its material condition: "The country cannot be said to be in a flourishing condition at present. While the railway was being built money circulated freely through the country and trade was brisk, but since the completion of

Boum-

The only industries are stock breeding and trade with the natives. Almost all the farmers combine the business of farming and trading, European goods being exchanged with the natives for cattle and small stock, but there is great difficulty now in disposing of these. There is no local market, and the journey into the Transvaal or Orange River Colony is a long and risky one."

Owing to the great losses already sustained by the European settlers during the recent native risings the condition of the colony is infinitely worse now, and the Reichstag has been asked for a grant to help in restoring the economic prosperity of the colony.

Boundaries. German South-West Africa, which comprises Great Namaland, Damaraland, Kaoko, and Amboland, is situated between 11° and 26° E. longitude and 17° 16′ and 29° S. latitude, its area being about 322,200 square miles and its coast line from the Orange River to the Kunene River about 900 miles.

It is bounded on the :-

North by the Portuguese colony, Angola.

South by Cape Colony.

West by the Atlantic Ocean.

East by Bechuanaland and British Zambesia.

The boundary line between German and Portuguese possessions in South-West Africa was fixed by declaration of 30th December 1886, the text of which is as follows:—

"The boundary line which shall separate the Portuguese and German possessions in South-West Africa follows the course of the River Kunene from its mouth to the waterfalls which are formed to the south of the Humbe by the Kunene breaking through the Serra Canna. From this point the line runs along the parallel of latitude to the River Kubango,* then along the course of that river to the village of Andara, which is to remain in the German sphere of influence, and from thence due east to the rapids of Catima on the Zambesi."

^{*} Okovango on map.

The Anglo-German Frontier lines were fixed by the treaty of 1st July 1890, the text of which is as follows:—

- 1. To the south, a line commencing at the mouth of the Orange River, and ascending the north bank of that river to the point of its intersection by the 20th degree of east longitude.
 - 2. To the east, a line commencing at the above-named point, and following the 20th degree of east longitude to the point of its intersection by the 22nd parallel of south latitude, running eastward along that parallel to the point of its intersection by the 21st degree of east longitude; thence it follows that degree northward to the point of its intersection by the 18th parallel of south latitude; it runs eastward along that parallel till it reaches the River Chobe (Tschobe), and descends the centre of the main channel of that river to its junction with the Zambesi River, where it terminates.
 - 3. It is understood that under this arrangement Germany shall have free access from her Protectorate to the Zambesi by a strip of territory which shall at no point be less than 20 English miles in width.

From the above territory must be excluded Walfisch Bay and the islands along the coast south of Angra Pequena, which are British possessions.

The country may be briefly described as a succession Mounof vast uplands, of a flat character in the north, becoming tains. higher and steeper in the centre, and changing into farstretching table-lands in the south.

Between 20° S. latitude and the northern frontier there is a large level plain, 500 by 125 miles, which stretches from the eastern edge of the mountains of Kaoko as far as the eastern frontier.

The plateaux are broken in all parts of the country both by steep, sharp-pointed, and larger flat-topped hills—an example of the former is the Omatako Mountain, the highest point in the territory (8,640 feet), and of the latter the Waterberg in North Damaraland.

On the western side the plateaux are much broken up by the numerous valleys of the rivers running into the Atlantic Ocean. Along the sea-coast there is a wide stretch of sandy dunes, and from the inland edge of this the country rises, at first gradually and then rapidly, to an average height of about 5,000 feet, and then from about a centre north-and-south line there begins a gradual descent to the east.

In the centre of the territory the highest point is in the Kamas Mountains (west of Windhoek), which form the water-shed between the Swakop River and the Kuiseb River; the highest points are Ongeama, Otyiseva, and Oshorongo. The Otjihivero Mountains are a narrow range attaining to a height of 6,400 feet, with, on the eastern side, an extensive plateau which runs into the Kalahari. The interior of Namaland, except in the mountain ranges such as the Karras Mountains, is for the most part open country with little vegetation.

Some information regarding the nature of the country in the valley of the Swakop is included in the description of this river and its tributaries (pages 15-18).

The Kalahari depression on the eastern side of the territory is a large sandy plain, which has along its western border low dunes similar to those along the coast, only not so high. It is much richer in vegetation than Namaland; there is plenty of bush on it, but water is very scarce.

In the northern part of Damaraland the Waterberg (6,400 feet) is the highest mountain. It is a plateau about 62 miles long and 19 wide, in the shape of a semi-circle, open side to the north. The heights of the ranges decrease as they get further north.

The three principal rivers, in fact the only ones in which there is water all the year round, are: -

The Orange, which is the southern frontier.

The Kunene, which forms the western portion of the northern frontier.

The Okovango or Ombuenge,* on the north-eastern frontier.

Rivers.

^{*} Also called the Kubango.

All the other numerous rivers are deep water-courses, in which there is only water above the surface at times during the summer (October to March), that is to say, in the rains, but even when there is none above the surface there is sometimes water running along the river-bed at a small depth below the ground. This is said to be generally the case in Damaraland. On the other hand, in Great Namaland, in most of the river beds one may dig down to the solid rock without finding water.

Occasionally in the rainy seasons the rivers rise exceedingly rapidly, very soon becoming raging torrents, and bringing down trees, rocks, and all kinds of débris, and transforming the river from a quantité négligeable into a serious obstacle.

The Orange River.

The Orange River rises in the eastern mountains of South Africa, and traverses nearly the whole breadth of the continent. In its course along the southern frontier of German South-West Africa, it runs through a thickly wooded, rough, and mountainous country, to within about 13 miles of its mouth, where the sand dunes begin. On the German side the country is so thickly wooded and mountainous that it is only with the greatest difficulty that it is possible to march continuously alongside the river: the few wagon-roads that exist have to make long détours inland, and for long stretches there are not even any bushmen's paths.

The above description applies particularly to the portion of the river west of Nabas.

Between Nabas and the sea the principal tributary is the Great Fish River, which, at its junction with the Orange River, is about 270 yards wide. It has running water all the year round only below Ai Ais, about 20 miles from its junction with the Orange River, and a little above where it is joined by the Goagib River. The banks are on the whole very similar to those of the Orange River. Between the Great Fish River and the coast are several small tributaries.

The following in order down the Orange River are known fords, with wagon-roads leading to and from them:—

- 1. Aussenkehr (south of Nabas) with roads to Richtersveld (Cape Colony)—Gaibes—Kanibes.
- 2. Petersen's House, with roads to the same places as in No. 1.
- 3. Nabas—with roads to Richtersveld (Cape Colony)
 —Gaibes—Kanibes.
- 4. Sendling's Drift (87 yards wide) with roads to Port Nolloth (Cape Colony)—Richtersveld (Cape Colony)—Bethanien. On the German side the hills at this drift are some distance from the river with a stretch of sand between.
- 5. Dabaras Drift on the road from Aris to Sendling's Drift viâ Annis (not marked on map).
- 6. Aris Drift, with roads from Goeddorn—Richtersveld and northwards to Obib, Witpütz, and Gubub.
- 7. Goeddorn Drift, on the direct road from Port Nolloth and on to Obib, Witpütz, and Gubub.

Between Aussenkehr and the eastern frontier, the principal drifts, practically the only ones used, are Vijoel's Drift, Ramond's Drift, and Scuit Drift. Ramond's Drift is one day's march from Warmbad. Scuit Drift is a small police post, and in 1901 a ferry-boat was kept there. (Lt.-Col. W. L. White, R.A.)

The Kunene River.

The Kunene River, about 750 miles long, is not very well known; in the dry season it is said to be about 110 yards wide and 3 feet deep, and when in flood to have a breadth of 1,100 yards. Dr. Hartmann in an account of his travels in Amboland (1901) gives the basin of the Kunene River as one to two miles wide, and mentions that in September wagons could only cross at the drifts.

The country on both sides is very wild, and the banks are generally covered with thick low bush or well wooded.

On the German side the high-water line is usually marked by rocks, while the Portuguese side is flat and bushy.

There is considerable forest land to the south of the river, and the soil is sandy as far down as the Etosha Pan. In the forest land there is water nearly all the year round, and in the rainy season (December to April) travelling is almost impossible owing to the country being flooded.

Between Humbe (Portuguese station) and the mouth of the river are three cataracts. The first two are close together, about 14 days' march from Humbe, and have a fall of 32 feet. There is a drift just above the first of these cataracts. The third cataract is about 18 miles lower down and has a fall of 320 feet.

The water everywhere is said to be brackish and often undrinkable.

The Okovango River.

The Okovango, which eventually, under the name of the Tioge River, flows into Lake Ngami, has all the year round a breadth of water of about 100 to 200 yards. When in flood it is said to be from 1,000 yards to—in some places between Nyangana and Andara—5,000 yards wide. The banks are generally covered with long grass and bush, with occasional stretches of forest, and on the south side, west of Ngami, are wooded sandy hills along the edge of the high-water line.

The Swakop River and its tributaries.*

Of the smaller rivers, which are merely dry beds for a large portion of the year, the Swakop River is the most important. Its course lies between Windhoek and Swakopmund. The following description of this river and its tributaries is taken from a report furnished by Lt. McClintock, R.E, in 1903:—

The Swakop River has a bed varying from 200 yards to 500 yards wide, and almost throughout its course is lined with trees and bushes. Every few miles in the bed of the river there are water-holes yielding large quantities of water, and it is said that water can be found everywhere

^{*} See map of the Swakop Valley in the pocket.

within 10 to 15 feet of the surface of the bed. Above Otjimbingue, water comes down the river frequently during the wet season, but it usually soaks away in the sand, and it is only once in the last six years that water has flown down the Swakop into the sea.

The country on the northern bank of the river is a series of wide valleys running down from the north-east, separated from each other by well-defined ranges of hills. The highest point on this side of the river is Okumpepera, about 12 miles north of Waldau, and here most of the northern tributaries have their source.

The Khan River, the largest tributary of the Swakop, rises on the northern side of Okumpepera and flows at first in a westerly direction, then turning to the southwest cuts its way through the district known as the Namieb, in a deep, narrow gorge, and joins the Swakop at Haigamkhab.

To the eastward of the Khan River the main valleys running down to the Swakop, taken in order from west to east, are:—

- (1) Valley starting near Sphinx and running south-wards.
- (2) Dorst River.
- (3) Gamikhaub River.
- (4) Okongowa River.
- (5) Omusema River.
- (6) Ongo-sa River.
- (7) Sny River.
- (1) This valley, which crosses the railway between Pforte and Jakalswater, is an open sandy plain, and is bare of all scrub and vegetation with the exception of some scanty grass. In July 1903 a well was being sunk on the railway between Pforte and Jakalswater, otherwise the only water obtainable in this valley is from the well 4 miles south of Jakalswater station, and the quantity in it is said to be very small.
- (2) The Dorst River rises in the Khuos (Chuos) mountains, and starting in a north-easterly direction corves round to the south east and joins the Swakop. In the upper

part this is a narrow valley shut in between the high range of the Khuos Mountains and the rocky hills to the west of Sphinx Station. Near Dorst River Station, however, it opens out to a width of about 8 miles, rising at an even slope from each side of the river bed, and is covered with sparse thorn, scrub, and grass. At Dorst River Station there is a good well yielding, as far as could be estimated, 3,000 gallons of water a day. In July 1903 the water stood within 15 feet of the surface.

(3) and (4) The Gamikhaub and Okongowa Rivers both flow through broad and open valleys, which are almost entirely devoid of scrub but are covered with thin grass. There are a few acacia trees, 20 to 30 feet high, in the beds of the rivers.

The rocky ranges of hills which separate these two valleys can be crossed with wagons in many places.

In the Gamikhaub valley there are no regular watering places, but in the Okongowa valley there are two wells. Details as to these are given in the report on the road Karibib-Objimbingue-Windhoek. (Appendix V.)

- (5) and (6). The Omusema and Ongossa Rivers both flow among high ranges of hills till they reach to within 15 miles of the Swakop, when their valleys widen out to a level plain thickly covered with scrub. The bed of the Omusema is 150 yards, and that of the Ongossa 100 yards wide at their junction with the Swakop, and they are covered with acacia trees 2 to 3 feet in diameter. Though there are few watering places in the beds of these rivers there is probably plenty of water to be found at no great depth.
- (7) The Sny River rises to the north of Okasise and flows due south across an undulating country covered with scrub and occasional trees. The river-bed is 150 yards wide at the point where the Objimbingue-Gross-Barmen road crosses it, and a plentiful supply of water is found within a few feet of the surface. The bed and banks are covered with large acacia trees.

None of the above rivers ever flow continuously for any length of time, but between October and March, after rain, they will sometimes send down a large volume

of water for several days. As a general rule the further from the coast the more often a river flows; the Dorst River, for instance, only flows once in two or three years, while the Sny River generally flows several times during each rainy season.

South of the Swakop the mountains rise sharply from the river and the country is much more rugged and broken than on the northern bank. There are no wide valleys opening on to the river on the south side, and no large tributaries within 200 miles of Swakopmund.

A few miles to the east of Gross-Barmen, the Tamarisk River, sometimes called the "Windhoek Swakop," flows round the eastern end of the plateau known as the Kamas Hochland (Highland), down the broad valley near the head of which lies Windhoek. The eastern boundary of this valley is a steep escarpment some 800 feet high, which runs north and south from Windhoek to Okahandya and forms the western edge of a plateau; beyond this plateau the country drains to the east towards the Kalahari desert.

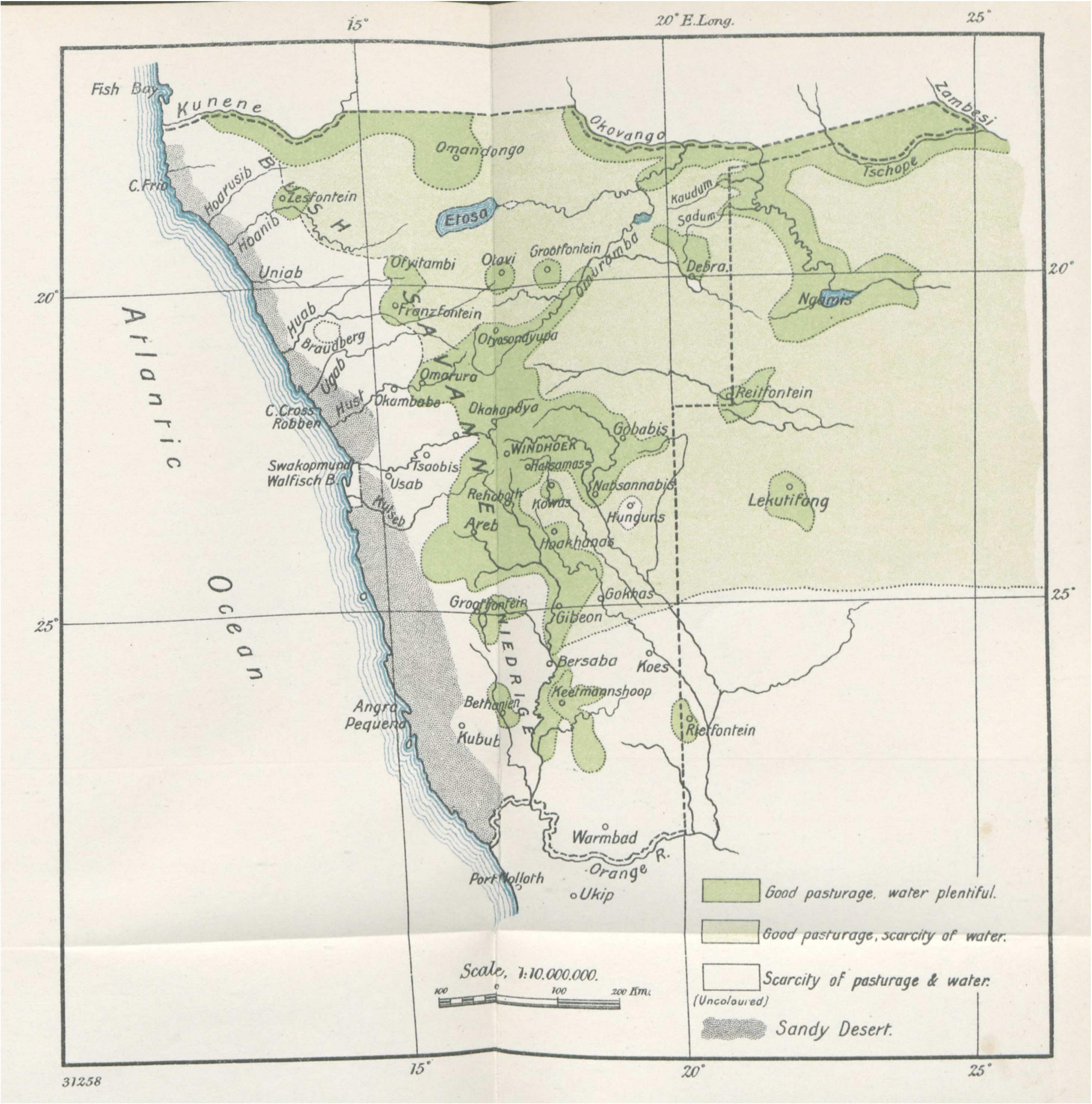
In the north-western portion of the colony, of the several rivers which flow towards the coast only the Hoanib ever reaches the sea; the waters of the others are absorbed by the sandy soil.

Some German writers maintain that South-West Water Supply and Africa, taken as a whole, cannot be said to have a scarcity of water, in spite of its many dry stretches of country, but this appears to be too optimistic an opinion.

> There would seem, however, to be little doubt that in many districts the lack of water is more apparent than real, and that by enlarging and deepening existing waterholes and digging fresh ones the supply can be largely increased if efforts are made to do so.

> But the ordinary German or Boer farmer has neither the money nor the enterprise to dig for water, and the natives use so little that a very small quantity suffices for themselves and their herds.

> The Government, however, has within the last year or two taken up this question energetically. Experi-



mental borings have been carried out in several districts with varying, but, on the whole, good results. From the nature of the ground the work is often slow.

An attempt is to be made to turn to better account the large volume of water which the Great Fish River discharges into the Orange River during the rains. It is hoped to prevail on the farmers to co-operate in the construction of dams.

The attached map from Von François's book professes to show where water and grazing are plentiful, and where there is a scarcity. From reports received it is believed to give a good idea of the general distribution of pasture and water, except that in dry years pasture is scarce round Gibeon and Keetmanshoop.

As already mentioned, although the majority of the rivers have only water above the surface at certain times of the year, yet in Damaraland there is nearly always trickling water at varying depths below the river bed, and in places where strata of rock occur transversely across the river, stopping the flow, the water accumulates, and rises to near the surface. These places are called Wasserstellen by the Germans. They are very numerous, and the natives know of many which do not come in the way of the ordinary traveller.

In the larger rivers water is generally found at a depth of 10 to 15 feet, but in the smaller ones the quantity and the depth at which it is found vary greatly from year to year.

When the water is not near enough to the surface, the natives dig trough-shaped trenches which they call Pützen.

These Pützen are sometimes to one side of the river bed, the course of the underground stream not being always quite the same as the surface one.

The presence of a certain bush with leaves resembling the Tuja tree is said to denote the presence of water.

A few cold springs are found in some parts of the colony, more especially in the Waterberg and Grootfontein country.

There are also some hot springs in the Windhoek district, the water of which, when cooled, is excellent for drinking.

In Appendix I. is given a list of some of the known Wasserstellen, springs, etc.

Wells of a diameter of about 10 feet have recently been sunk by the Government in many places along the railway, and details as to these are given in the report on the railway.—Appendix V.

A certain number of private farms have also been provided with wells by the Government; the cost of sinking them through the rock is generally too great for private individuals to attempt it.

At many of the watering places on the main roads pumps and troughs have been erected.

Coast line and Harbours.

Nearly all along the coast line there runs a strip of dunes and sandy, waterless desert of varying width. At Swakopmund it narrows down to nothing, commencing again to the north of that place.

The coast has few bays or suitable places for harbours, and the Germans were in some difficulty as to their choice of where to make their principal port; Swakopmund was finally decided on.

As regards physical conditions, its only recommendations appear to have been the presence of fresh water and the absence of the sandy dunes, which along the rest of the coast bar the way into the interior.

The consideration of the best route for the railway to Windhoek, and the small choice that offered itself, are probably responsible for its selection.

Germans maintain, as one of its advantages, that there is no chance of its becoming sand-choked, a fate which they prophesy for Walfisch Bay. English officials at the latter place, however, take an exactly contrary view.

North of Swakopmund the coast is alternately sandy and rocky.

Nine and twenty-one miles north of Swakopmund are Rocky Bay and Farilhas Point (not on map) respec-

tively. Both are unsuitable landing-places owing to reefs and heavy surf.

Half-way between Swakopmund and Cape Cross is a fresh-water Stelle, the only one for 75 miles, and it only has water occasionally in the rainy season, and then it is thick and brown.

At Cape Cross, which is 75 miles north of Swakop-mund, landing is a very difficult operation, in fact, only possible on a few days in the year.

South of Swakopmund the principal bays (exclusive of Walfisch Bay) are Sandwich Bay, about 30 miles south of Walfisch Bay, Spencer Bay, Hottentot Bay, and Lüderitz Bay (Angra Pequena).

Swakopmund Harbour.—The coast to the immediate north of the Swakop River is low lying, and about 200 yards from the beach the land rises to a height of 50 feet above sea level, and a sandy plain extends inland, gradually rising to a low ridge, which is crossed by the railway at $3\frac{1}{2}$ kilometres from the terminus, or approximately 4,500 yards from the sea.

On this sandy plain, about 1½ miles to the north of the Swakop River, lies the town of Swakopmund, a description of which will be found on page 32.

The map of Swakopmund in the pocket shows the position of the harbour.

Reichs-Marine-Amt. No. 132 Tit. VIII. No. 13b. December 1902.)

A submerged ridge of rocks runs parallel to the coast at a distance of about 300 yards, and acts as a break-water. There are two openings in this ridge, the most southerly of which is used by surf-boats, and the other one, in conjunction with the mole, forms the harbour.

The mole, which is about 370 yards long, projects out from the centre of the town with a short cross-arm on the northern side 87 yards from the head. The construction of the mole appears to be much too light to withstand the heavy seas which prevail on this coast, and the end was washed away a few weeks after the opening ceremony.

In July 1903 about 50 feet more appeared to be undermined by the sea and liable to be washed away at any time.

The crown of the mole is 11.2 feet above low water, 6.4 feet above high water, and along the southern edge of the top there is a wall about 6 feet high.

In the original design it was proposed that a second mole should close the harbour on the northern side, but this intention has not so far been carried out.

The object aimed at was to get a safe harbour into which lighters, carrying from 50 to 100 tons, could bring cargoes from large ships lying at anchor outside and land them on a quay, and which would also admit of small steamers up to 500 tons loading and discharging at a quay in safety.

It appears doubtful whether this object has been attained, and in the opinion of many the money spent on the mole has been wasted.

The harbour was to have an area of 7 acres and a depth of water of 9.6 feet.

A branch line from the railway runs down on to the mole, on which there is a travelling steam crane capable of lifting 5 tons.

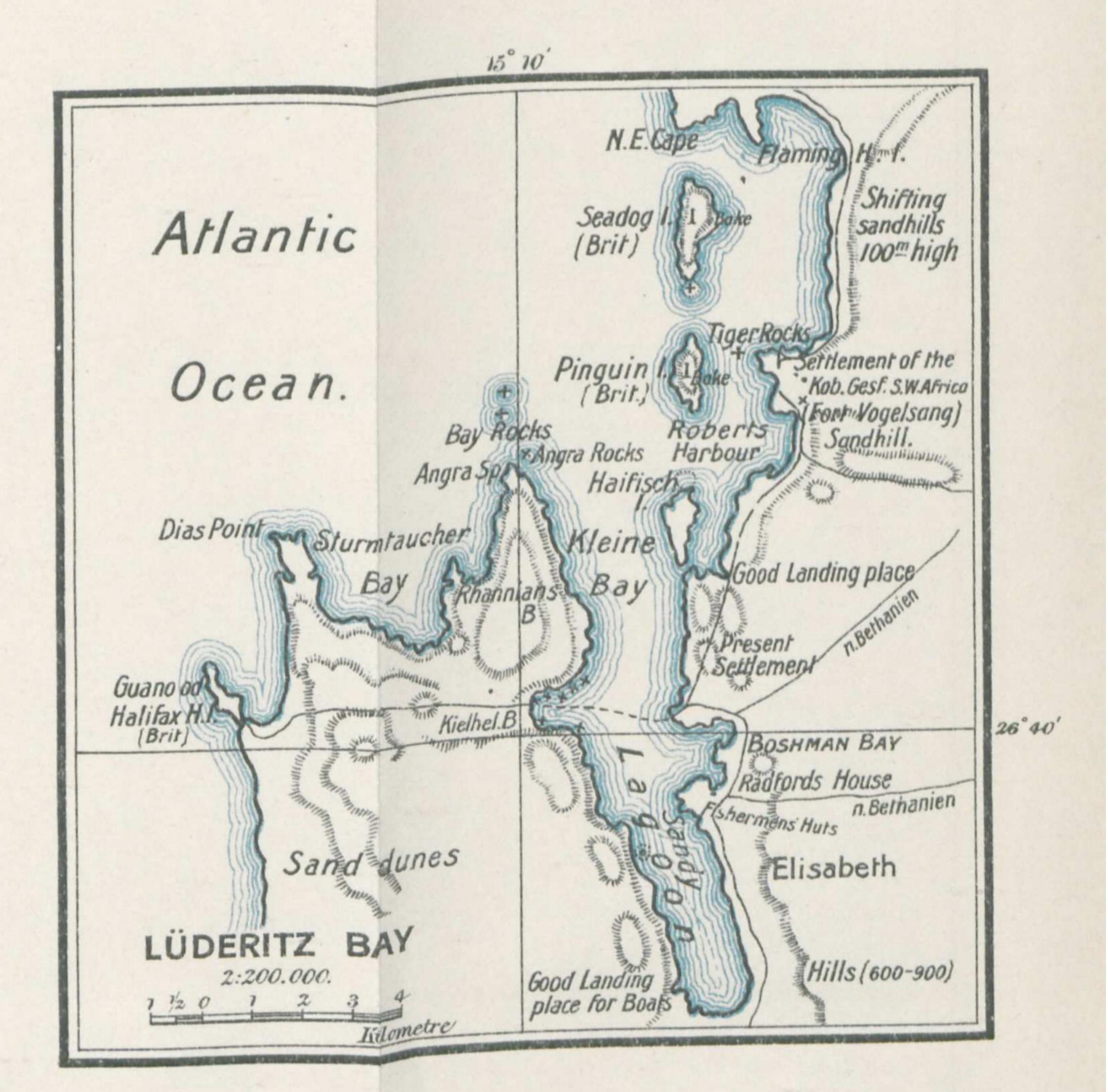
For use in the harbour there are seven wooden lighters of 30 tons capacity and a large steam-tug.

A slip for this tug is in course of erection near the base of the mole.

The lighters are flat-bottomed, about 45 feet long by 10 feet broad, undecked, except for a length of 3 feet fore and aft, and suitable for landing bulky stores. Wagons and guns could not easily be unloaded from them without the use of a crane. Should the crane on the mole bedamaged, there is plenty of material in the workshops and harbour works from which sheers could be built.

There are about 12 surf-boats, manned for the most part by West African natives, who speak broken English.

The surf-boats are from 30 to 40 feet long, with 6 to 8 feet beam.



31258.

When the sea is rough no goods can be landed either in surf-boats or at the mole, and communication with the shore is often cut off for days together.

It is said that stores can sometimes be landed in surfboats when it is not possible to use the mole.

For landing heavy stores from surf-boats a temporary staging is generally erected on the beach.

In November 1903 2,000 tons of rails, etc., were landed from a Woermann Line Steamer in 13 days; this was considered a good performance. The weather was fine.

The average rise of tides is 4.8 feet, and spring tides do not exceed 5.2 feet.

The wind is nearly always from the sea, usually light and northerly in the mornings, changing to stronger and south-westerly later in the day. It is said that there is never a heavy sea with a northerly wind.

The original estimate of the cost of the works was £60,000.

Sandwich Bay.—Sandwich Bay was in former days an excellent natural harbour, but now, owing to the gradual receding of the sea, the bay has almost closed up, only a narrow, shallow opening being left, and has become practically a closed lagoon. The greater part of the waters of the Kuiseb River flow into Sandwich Bay, the remainder into Walfisch Bay. The crossing of the sand dunes from here into the interior is long and difficult. Along the shore 30 to 100 yards from the sea, north of Sandwich Bay as far as Gorogos, fresh water is found by digging.

Hottentot Bay.—Hottentot Bay is a small one, well sheltered by a strip of land running north and south, but the sand dunes at this point are so serious an obstacle to communication inland that its possibilities as a port have not been considered, and very little is known of the country on the other side of the dunes.

Lüderitz Bay (Angra Pequena).—The attached German sketch map shows the formation of Lüderitz Bay, which is used to a certain extent for landing goods

for districts in the southern portion of the colony. The original settlement and landing-place was in Roberts Harbour, but communication inland from here was so difficult that it was given up, and the settlement is now between Haifisch Island and the lagoon, and is shown on the sketch map as "present settlement"; here a jetty has been built, alongside which boats drawing up to 9.6 feet can come. There is a steam crane and a small coal depôt.

Between the Angra Rocks (uncovered even at high water) and Angra Point is a channel suitable for small vessels, depth 22 feet, but the entrance to Lüderitz Bay proper begins between the Angra Rocks and Haifisch Island: width about 1½ miles, navigation easy, and anchorage excellent. The entrance to Roberts Harbour is 38 feet deep, and the anchorage at 25 feet is good. A violent wind from the east however occasionally springs up, and then ships have to put to sea.

Lighting arrangements are insufficient at present, but it is proposed to build powerful lighthouses at Dias Point and on Haifisch Island.

Want of fresh water has been the great drawback to Lüderitz Bay. Condensing machinery and a sun condenser have been provided, and drinking water can now be bought at 4 pfennige the litre. Searching and boring for fresh-water springs is taking place some miles inland, with what results is not yet known.

Herr Ortloff, who was sent to inspect and report on "possible landing-places" along the coast of German South-West Africa, stated in his lecture in December 1901 that Lüderitz Bay, provided a supply of fresh water could be arranged for, would be the best harbour not only in German South-West Africa, but also on the whole West Coast of Africa. Anchorage in Sturmtaucher Bay (sometimes called Sturmvogel Bay) is good. Depth, 25 feet.

Major Laffan, R.E., who travelled from Kubub (or Gubub) to Lüderitz Bay, says, "for the last four days' trek there is absolutely no grass (which, therefore, has to be carried) and only one well, and the road is very heavy over the sandy dunes."

The climate is on the whole healthy for Europeans, Climate. but in the interior malaria is prevalent. There is said to be as a rule but little typhoid or typhus fever, though there was an epidemic of the latter at Swakopmund in 1902. Diseases of the eye, venereal, and tapeworm are the more common complaints.

The northern part of the territory is in the tropics.

In the vicinity of the coast the climate is very dry, and any considerable rains are rare. On the higher lands in the interior there is a more regular rainy season.

Changes of temperature between night and day are very great, and in the cold season, south of 20° S. Latitude, frosts at night are common.

It is said that high temperatures can be better supported in this colony than in other places, owing to the clearness and purity of the air and to the fact that the nights are always more or less cool. Only occasionally in the western and northern districts is it necessary to abstain from working in the open in the daytime.

In the hottest months, December and January, the maximum and minimum temperatures recorded are 100.4° F. (day) and 59° F. (night); in the two coldest months, June and July, 82.4° F. (day) and 15.8° F. (night); these readings were taken at Tsaobis.

The rainy season begins in October, but, as a rule, there is not much rain for the first two months. In southeast Namaland, February and March are the wettest months, but in the Swakop valley and some other parts most rain falls in December and January, and between April and September there is often none at all.

In 1891, considered an ordinary year, the following were the respective rainfalls in three inland localities:—

Tsaobis - - - 2·19 inches.

Windhoek (considered the wettest place in the country) - - 10·5 ,,

Rehoboth - - - 8·2 ,,

Along the coast, as little as 1.32 inches have constituted the rainfall for a year. In Great Namaland the rainfall is much smaller and less regular than in the northern portion of the colony.

Population. Comprehensive tables of the white population on 1st January 1903 are given in Appendix II.

There are no reliable statistics of the native population. The following are estimates by the German authorities on the 1st January 1902 for certain districts:—

1,000 Bastards. 100 Hereros. Keetmanshoop - about 10,000< Remainder Hottentots. 15,000 Hereros. 5,000 Damaras. 2,000 Bastards. Windhoek - about 23,000 Remainder Hottentots and various. 329 Ovambos. 287 Hereros. 67 Hottentots. 64 Kroomen. In Swakopmund- about 1,040 12 Kaffirs. Remainder women and children.

Estimates of the total numbers of the Ovambos, Hereros, and Bergdamaras are given in Chapter IV.

A considerable number of Boers migrated into German South-West Africa during the South African war, but many of them appear to have left again, as there were 1,354 on the 1st January 1902 and only 973 on the 1st January 1903.

A portion of this decrease is however due to a certain number of them having become naturalized Germans.

At the end of 1902 an agreement was drawn up between the Governor of the Colony and two Dutch Africander representatives, laying down the Conditions for the Settlement of Dutch Africanders in German South-West Africa.

In it was expressed the desire of the German Government that all Dutch Africanders should belong to the German empire, and it was pointed out that though this entailed compulsory military service it carried with it compensating privileges as regards franchise, purchase of land, state aid, etc.

The head of the civil administration is the Governor, Civil adamd under him are the Commissioners of the six districts ministration which the colony is divided. The districts are subdivided into stations or sub-districts which are in charge of military or police officers, except the smaller ones, where there are only non-commissioned officers. The seat of Government is at Windhoek. The six districts are as follows:—

Windhoek, Gibeon, Keetmanshoop, Swakopmund, Omaruru, and Outjo.

For judicial purposes there are only three provinces: Northern (headquarters Windhoek), Western (headquarters Swakopmund), and Southern (headquarters Keetmanshoop).

The German administration receives much unfavourable criticism. By the Europeans the Government is considered to treat the natives too leniently; complaint is made that the laws relative to a close season for game are not enforced on natives as they are on Europeans, and that the natives are allowed to refuse to sell land and to bargain as to the price to be paid.

At the same time the hatred of the natives for the Germans has been reported by non-German visitors to the colony to be very pronounced. This has been recently corroborated by the rising of the Bondelzwarts and Hereros.

The external relations of the colony are confined to the External Portuguese and Great Britain. As regards the former, relations. there has at times been some friction in connection with the frontier between German South-West Africa and the Portuguese colony of Angola, and from time to time complaints have been made in the Portuguese Press of German encroachments.

ALLS BERTHE SEGREDARY BURNOWS DURING STREET

As regards relations with Great Britain, their nature can be gathered from the short history of German South-West Africa given at the beginning of this chapter. The most recent question arose during the South African War, when the trekking of the Boers into South-West Africa, and the possibility of their receiving guns, ammunition, supplies, &c., through that country, had to be considered, and was the subject of some communications between the two Governments.

Revenue and Expenditure.

The estimated revenue and expenditure for 1904-5 are as follows:—

	£ 135,990 270,810	as compare £ 27,421	increase. decrease.
	£406,800	£14,770	decrease.
	£	£	
	00000	01.101	
-	372,540	34,434	increase.
	33,538	49,206	decrease.
-	722	2	increase.
	£406,800	£14,770	decrease.
		- 270,810 £406,800 £ - 372,540 - 33,538 - 722	£ £ £ - 135,990 27,421 - 270,810 42,191 £406,800 £14,770 £ £ - 372,540 34,434 - 33,538 49,206 - 722 2

The principal items in the non-recurring expenditure are:—

£10,625 for roads and water.

2,500 fourth instalment for the increase in Artillery and the supply of reserve ammunition.

2,000 for assistance to settlers on account of losses in cattle from rinderpest.

Chief
Towns and
European
Settlements.

Chief The following are the chief towns and European Towns and settlements:—

Windhoek District.

Windhoek.—Situated on the northern slopes of the Auas Mountains, Windhoek is the seat of Government and the terminus of the railway. A plan of the town will be found in the pocket at the end of the book.

The main street, Kaiser Wilhelm's Strasse, runs nearly north and south for a distance of one mile; on the low-lying ground on the west side are the stores,

hotels, and civilians' houses, while the rising ground on the east side is reserved for military and officials. The principal buildings are:—

The Governor's House.

The Government Offices.

The Barracks.

The Military Clothing Store.

The Native Church.

The Roman Catholic Church.

Most of the buildings are built of a dark red local brick which gives a picturesque appearance to the town. The barracks are a large square building, with walls 2 feet thick, castellated and loopholed, and with towers at the corners.

The two churches are solidly built with walls 2 to 3 feet thick.

There are three principal hotels, about 12 general stores, two slaughter-houses, bakeries, wagon-makers, shops, &c.

Between the barracks and the main street there are several corrugated iron sheds forming the military store depôt, where a large quantity of provisions, forage, and ammunition are stored. A branch of the railway runs into this depôt and there are platforms and cranes for unloading trucks.

About a mile to the south-east of the town (generally known as Gross Windhoek), across a rocky ridge, lies Klein Windhoek, where the Government have laid out allotments and try to induce Germans to settle. The Klein Windhoek valley is fertile, with abundant water. In Gross Windhoek there are nine, and in Klein Windhoek three hot springs. These springs have a temperature of about 180° Fahrenheit, and yield a copious and unvarying supply of water, which is distributed through the town in pipes.

The surrounding country has been briefly described as follows:—A high range of hills runs from Klein Windhoek northwards to Okahandya, forming the escarpment of a table land, and parallel to this for some distance runs the line of mountains lying to the west of the

Tamarisk River, and forming the edge of the plateau known as Kamas Hochland (Highland). The valley between these two ranges, varying from 6 to 10 miles in width, is undulating and broken in places by hills, but it is passable everywhere for wagons. To the southward of Windhoek this valley is broken and lost among high mountain ranges.

The roads converging at Windhoek are :-

- 1. From the north along the railway from Oka handya (45 miles).
- 2. From the west from Seeis.
- 3. From the south from Rehoboth.
- 4. From the south-west from Aukeigas.
- 5. From the north-west from Tumiberaobis on the Tamarisk River.

Okahandya.—This large Herero town and trading station is situated on the Swakop River at the 311th kilometre of the railway. It is a Government station and a military post.

The right or western bank of the river, on which the town is built, is low lying, but on the opposite bank are rocky hills about 400 feet high, a continuation of the range running north from Windhoek.

The town consists of the "Garrison Building," artillery barracks, three stores, one hotel, one wagon-maker's shop, a mission house, a native church, and a large native settlement.

The garrison building, used as officers' quarters, police quarters, and Government offices, is a large square structure, 100 feet square, built of soft brick, with walls 2 feet thick, castellated and loopholed, having towers at the corners. There is a well inside.

The artillery barracks are situated a mile to the south of the railway station, and are small one-storeyed buildings of mud and local brick.

The water supply comes from wells and pits in the river bed and is practically unlimited.

Large herds of cattle, sheep, and goats are owned by the Herero chiefs. The natives live along both banks of the river.

The four roads which converge at Okahandya are:-

- 1. From the north-west along the railway from Karibib and Omaruru.
- 2. From the east from Otjosasu (14 miles).
- 3. From the south along the railway from Wind-hoek (45 miles).
- 4. From the south-west from Barmen and Otjimbingue.

Rehoboth.—A Bastard town and military post about 50 miles from Windhoek on the main road to the south. It has a plentiful supply of water obtained from hot springs. There are cattle, sheep, and goats in large numbers.

Gross-Barmen.—A military post south-west of Okahandya, on the right bank of the Swakop River. A description of the town is given in the road report Otjimbinque—Gross-Barmen in Appendix V.

Gobabis.—A government station and military post on the Nosob River east of Windhoek. Wood and water are plentiful.

Gibeon District.

Gibeon.—Situated on the Great Fish River. Headquarters of the district and military station. The chief of the Witboois has his residence here. The barracks are on a hill to the south-east of the town.

Marienthal.—A military station on a large farm belonging to H. Brandt. The farm consists of two plateaux divided by a valley running east and west. Good springs on both plateaux. The barracks are on the southern plateau. The climate is very dry, and the heat is great in November and December. The rainy season lasts from January to April. Important irrigation works have been carried out.

Grootfontein.—A military post to the west of Gibeon. (There is another place of the same name in the Outjo district.)

Keetmanshoop District.

Keetmanshoop.—Headquarters of the district, which comprises the most southern portion of the colony. It is also a military station. Water good and plentiful, wood scarce.

Warmbad.—A military post about 25 miles from the Orange River. Water plentiful but slightly salt. In the vicinity there is a hot spring with curative properties for skin disease and rheumatism. Climate good. The natives are principally Bondelzwarts.

Bethanien.—A police post to the west of Keetmanshoop. The surrounding country is fertile, and there is much grass land. Water supply good. Climate excellent.

Lüderitz Bay.—Harbour and police post. (For description see page 23.)

Swakopmund District.

Swakopmund.—Headquarters of the district, military station, and principal port of the colony. The town is situated on a sandy plain 50 feet above sea level and about 200 yards inland from the beach. The public buildings are the Railway station, Barracks, Court-house, Post Office, Hospital, and the old and new Customs Houses. The remainder of the town consists of seven or eight hotels, the same number of stores, also bank, brewery, steamship company offices, and a few private houses, including that of the English Manager of the Cable Company. The railway station is at the northern end of the town, half a mile back from the sea. (See page 150.)

The Court-house is an imposing granite building on the sea front, in the centre of the town. It has a tower and revolving light. The barracks consist of wooden huts situated behind the Court-house.

The Hospital is a large stone building lying on low ground near the mouth of the Swakop River.

The old Customs buildings consist of several corrugated iron sheds in an enclosure standing on the highwater mark at the landing place for surf-boats, towards the southern end of the town. The new Customs sheds

are brick buildings at the foot of the mole, and have considerable storage capacity. With the exception of the Cable Superintendent's house, a substantial two-storeyed building at the northern end of the town, the remaining buildings are of slender construction, of wood or brick, and mostly one-storeyed.

The town is built on very soft sand, and a railway line, of the same gauge as the main line, runs along most of the streets and into the Customs sheds and principal stores. Goods are moved on trolleys drawn by horses and mules.

The water supply comes from a trench dug in the bed of the Swakop River a quarter of a mile from the sea. The water, which stands normally at a depth of about 8 feet below the river-bed, is pumped up in a 2-inch water-pipe into a reservoir situated at the southern end of the town. From this reservoir the water is distributed in pipes through the town. A high water-rate is charged. This water is also used on the railway, and for this purpose a line of rails runs down to the river, and tank trucks are filled there.

The cold sea-current from the south and the prevailing south-westerly wind tend to keep the temperature low, but when an east wind does occasionally blow, the heat and sand are said to be unbearable.

Between March and October there is often a damp sea fog. The rainfall is almost inappreciable.

Enteric fever used to be very prevalent, but since attention has been paid to sanitation there is great improvement in this respect.

Horses and mules are fed either on imported forage or on grass sent from inland. No grazing is obtainable in the neighbourhood, except in the bed of the Swakop River. The nearest good grazing ground is said to be at Nonidas.

The country round Swakopmund being uninhabited but little trade is done, and the firms only keep sufficient stock to meet the requirements of the inhabitants, and forward the bulk of their goods inland. Government and military stores are dealt with in the same way, con-

sequently only a very small quantity of supplies or other goods is obtainable locally.

The only fuel in the neighbourhood is a little brush-wood in the Swakop valley and some drift-wood on the beach.

There is always a considerable quantity of coal, in briquettes, stored for use on the railway and for the consumption of the inhabitants.

Cape Cross.—A Customs and police station 75 miles north of Swakopmund. There is no drinking water, except what is obtained from condensing, within a five hours' ride. The climate is healthy, but the heat is great in summer. An English Company for working guano was established here for some years, but has recently been dissolved.

Omaruru District.

Omaruru.—Situated to the north of Karibib, and headquarters of the district and a military station. The bed of the Omaruru River divides the settlement into two parts. In the surrounding country there is good grazing for cattle and small stock. Excellent water is always obtainable in the river bed. The climate is good. The natives are Hereros. (See also Road Report No. 6, Appendix V.)

Otjimbingue.—Situated in the Swakop valley, 34 miles to the south-east of Karibib is a Government station and military post. For description of the town see the road report Karibib—Otjimbingue (Appendix V.).

Karibib.—Since the railway has been made, Karibib, which is situated at kilomètre 120.7, has become an important place. The town has one street and contains three hotels, four or five stores, and two wagon-maker's shops. On the southern side of the town a spur of a mountain range extends to within 400 yards of the houses, and on this spur at a height of about 60 feet is a heliograph station.

Karibib lies at a height of nearly 4,000 feet above sea level and the climate is healthy.

The water supply is abundant. There are three wells, each about 100 feet deep, in the town, all three near

together eastward of the station. One of these is worked by an air motor, and the other two have pumps driven by electric motors placed in a shed over the wells, and connected to the main dynamo in the railway workshops. The average amount obtained daily from the wells is:—

Air motor, 20 cubic metres	gallons. 4,400
No. 1 well, under water-tower, 28 cubic metres No. 2 well, 50 yards north of tower,	6,160
50 cubic metres	11,000
Total	21,560

It is said that the wells could give more if required.

Over one of the wells is built a water-tower with a tank capable of containing 13,200 gallons. Of this water 30 cubic metres are sent away daily in tank trucks for use on the Karibib-Kubas section of the railway.

In addition to the above there are two more good wells in the bed of a small river, half a mile to the north-west of the town, near a farm. They are fitted with hand-pumps and drinking troughs, and the water, which is of excellent quality, stands within 10 feet of the surface.

The hundreds of oxen, which are often waiting to start with transport to the north, water at these wells, and the supply appears to be unlimited.

Karibib is the base from which all stores are despatched to the northern part of the colony, and the firms have always large stocks in hand. There is also a considerable quantity of military stores kept in sheds on the northern side of the railway. From these Outjo, Omaruru, and Grootfontein are supplied. The flats in the neighbourhood provide good grazing, and the residents own large numbers of cattle, sheep, and goats.

The roads running into Karibib are:-

- 1. The old transport road from the west, which crosses the Khan River at Usakos.
- 2. From the north-west, from Amieb (20 miles).

- 3. From the north from Omaruru (40 miles); main road.
- 4. From the east from Okahandya along the railway.

5. From the south, from Otjimbingue.

6. From the south-west, from Habis along the railway.

Outjo District.

Outjo .- Headquarters of the district, which is at present the most northerly one in the colony. It is also a military station. Water supply good. (See also Road Report No. 8, Appendix V.)

Franzfontein.—A military post to the west of Outjo. Between Franzfontein and Otyitambi in the north there is a good road over the mountains. Water flows into the town in a small stream 1½ feet wide and 2 to 3 inches deep. The temperature is very high between November and February.

Waterberg .- The settlement is at the foot of the mountain of the same name. It is a Government station.

There is a stream with sufficient water to work a mill.

Grootfontein .- A Government station in the Upingtonia territory. The country round is fertile and water obtainable.

Walfisch Bay.

Walfisch Bay. -- Walfisch Bay has an area of about 360 square miles; it is, with the exception of the river beds, an almost entirely arid desert. The sandhills begin between 2 and 2½ miles from the sea, and are here about 3 miles broad. A proposal that the Anglo-German frontier of the Walfisch Bay territory should be delimited by a Mixed Commission is now under consideration.

The bay has on its western side a sandy peninsula about 4 miles long; the breadth of the entrance is 33 miles.

The harbour is described as an excellent one with good holding ground and deep water. There is a wooden jetty, 100 yards long, with a 31-ton hand-crane on it. There are three 50-ton lighters and a steam-tug. The lighters are decked and would be inconvenient for landing guns and wagons. There is at present condensing plant capable of supplying 400 gallons a day, but more extensive plant is about to be erected.

The roads are only wagon-tracks, but carts can travel along well on the hard wet sand of the seashore at low-tide, and this is the best road to Swakopmund.

The alternative is to cross to the inland side of the sand dunes, where there is hard veld, and go round by Nonidas.

There is a narrow-gauge (2 feet 6 inches) railway from the jetty round the southern edge of the sandhills to Rooikop, which is on the eastern edge of them.

At Rooikop commences a strip of level open country running parallel to the coast on the inland side of the sandhills. The soil is decomposed granite, which makes excellent going for wagons or horses, and there is some grazing on it.

From Rooikop roads lead northwards to Nonidas and Richthofen, and north-west to Haighamkhab and Husab.

A report on the road from Walfisch Bay to Swakop-mund is given in Appendix V.

CHAPTER II.

COMMUNICATIONS.

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Roads.

Roads, as we understand them, were till recently practically non-existent, but a good deal of attention and labour has of late years been given to improving the wagon tracks connecting the more important stations, and there are now practicable but slow routes from the various towns on the coast to the principal places inland, and also between the more important inland stations.

As regards the roads from the coast, the first stages are always difficult on account of the sand dunes which have to be crossed.

The main road to the south from Windhoek runs through Rehoboth to Gibeon, and the main road to the north from Karibib through Palafontein to Outjo.

Regarding the roads from Swakopmund, the principal port, to Windhoek, the chief town of the colony, the following general report, furnished by Lt. McClintock, R.E., in 1903, deals with them as far as, roughly, a north and south line through Karibib.

"Swakop Valley Roads.*—There are no made roads, but connecting all the stations and principal watering-places are wagon tracks which usually follow the line of the old native paths. The more important of these roads have been improved by the removal of the larger rocks, and in some places drifts have been improved; taken as a whole, however, the roads in the Swakopmund-Windhoek district are bad, being either rocky or sandy. The transport riders, who have largely disappeared from this district since the opening of the railway, appear to have been unenterprising people to whom time was of no

^{*} See map of the Swakop Valley in the pocket.

value, and the absence of a road or a short cut does not argue the existence of any intervening difficulty.

"As far as could be seen, a wagon can be taken anywhere across country, except, of course, over the big mountain ranges, but in the country round Karibib and Otjimbingue it would be necessary in places to cut some of the scrub, and over a few of the main watercourses drifts would have to be made.

"Before the opening of the railway the main line of transport from Swakopmund or Walfisch Bay to Windhoek followed one of two routes, either up the Swakop valley to Otjimbingue and Barmen, or by the "old transport road" through Rossing and Usakos to Karibib, and from there along the present course of the railway. Since the construction of the railway the transport trade in this district has been killed, and wagons never now travel along either of these roads, but the following particulars regarding them were obtained from transport riders who had often used them in former days.

"Wagons following the road up the Swakop valley would travel on either bank of the Swakop River or cross from one to the other according to where the best grazing for their oxen was to be found. The road followed the course of the river as far as Diepdal or Horabis; from there most transport riders used to cut across to Tsaobis, but some would follow the course of the river all the way to Otjimbingue.

"The road following the river is bad and hilly; wagons used frequently to be stuck in the heavy sand, and broken or upset by the rocks. The only thing to recommend this road is that water is frequent and plentiful, and grazing usually good.

(The tables in Appendix IV. give the watering-places.)

"The alternative route followed the line of the railway to Rossing, and from there went viâ Arendis, Aniskomop and Zariediep to Usakos. On this route the travelling is excellent, but except in, or soon after, the rainy season, when water is found in depressions in the rocks, there is no water and very little grazing between Richthofen and

Usakos, a distance of about 75 miles. It was the transport riders' custom to make a depôt at Rossing of grass brought up from the Swakop valley, and from here their wagons would push through, with as few outspans as possible, to Usakos, occupying usually two days and three nights on the whole journey from Richthofen to Usakos. Although this was trying to the oxen, even though they are accustomed to be watered at most once in two days, three out of four transport riders carrying stores to Windhoek preferred this route, involving as it does this long waterless stretch of road and the circuit viâ Karibib and Okahandya, to the sand and rocks of the Swakop valley road.

"According to an English resident at Ukas, wells have recently been opened up at Ketmanumps (½ mile W. of the Khan River and 5 miles E. of the old transport road from Rossing to Usakos), and at Bitterpits (in the bed of Khan River), and there is now, even in dry weather, a plentiful supply of water in them. It is also stated that water can be found anywhere in the bed of the Khan River at a depth of 10 to 15 feet. From Rossing to Ketmanumps is only 43 miles, so the length of the waterless stretch is very much reduced from what it was.

"Ketmanumps is the most southerly place at which the crossing of the Khan River is practicable for wagons, but north of it this river can be crossed anywhere.

"The road from Walfisch Bay to the "old transport road" runs viâ Sandfontein, Haigamkhab and Anentis to Aniskomop. The following distances were measured by tacheometer by the expedition making the survey for the Otavi railway:—

					Miles.
Walfisch Bay	-	-	-	2006	STATE OF
Sandfontein -	-		-	- 17	3.037
Nuib	-	-		-	8.11
Dupas River-		7	-	-	18.41
Haigam Khab	-			-	36.97
Summit (N. of Sw	vakop	River	.)	- 18	40.07
Anentis (outspan)				-	47.7
Damo Lans Hill	-	-	-		58.86
Aniskomop -			-	4	65.07

						Miles.
Twisis -	age a		17 10 15		-	85.31
Usakos	Ben TR			- JRY	-	106.97
Karibib	977149	- 203			-	125

(All the above places are not marked on the map, but the general line of the road can be followed.)

"In addition to these two main routes, a few transport drivers used one which crossed the Khan River at the place where the railway now crosses it, and then ran viâ Jakalswater to the Swakop River, but this road was only rarely used."

Road reports of the different routes eastward from Kharibib to Windhoek are given in Appendix V., also reports on the Walfisch Bay-Swakopmund road, the roads to the north of the railway from Kharibib into Ovampoland, and the road from Lüderitz Bay to Keetmanshoop. Lists of the roads entering Windhoek, Okahandya, and Kharibib are included in the notes on these places in Chapter I.

In Appendix IV. there is a general table of routes, distances, etc.

The only railway at present existing is the line from Existing Swakopmund to Windhoek, which was finished and Railway. opened for traffic in June 1902. It took five years to build, and cost £687,000. Length about 237 miles. It is owned and managed by the Government. The gauge is 60 centimetres (23.63 inches). The rails are bulb Teesection, 5 metres (16 feet 5 inches) long. Weight 47½ kilos (104½ lbs.). The sleepers are of iron, weight 16 lbs. 6 ozs., bolted to the rails, spaced approximately 2 feet apart, 8 to each pair of rails. The rails in the first instance were sent out from Germany already fixed in lengths on to the sleepers, and much of the spare material is stored in this form, but lately, to save freight, they have been sent out separately and bolted together in situ.

Traffic.—Up to July 1903 two passenger trains, and usually three goods trains, ran each way weekly, but the number of passenger trains has now been reduced to one per week each way, and goods trains run at uncertain intervals as a train-load is ready for despatch. The bulk

of the goods carried upwards from the coast consists of military stores, food, liquor, building material, and a certain quantity of goods for the native trade. There is practically no downward traffic at present except a few hides and horns, almost all the trains running in this direction being composed of empty trucks.

Passenger trains perform the journey from Swakop-mund to Windhoek in two days, stopping for the night at Karibib, and goods trains take four days to cover the distance, stopping for the night at Jakalswater, Karibib, and Waldau.

The average rate of a passenger train while in motion is about 13 miles an hour. Trains do not run at night, but as the passenger trains do not arrive at their journey's end till about $2\frac{1}{2}$ hours after dark in the winter, there seems to be no reason, except convenience, why they should not do so. With a view to increasing the revenue of the colony the charges for passengers and goods, which were moderate at first, have been doubled since October 1903.

Rolling Stock.—The rolling stock consists of:-

200 Passenger and goods trucks.

40 Water trucks.

4 Heavy engines.

60 Light engines.

Owing to the sharp curves to be negotiated, all rolling stock is made on the bogie system.

The passenger coaches, of which the number is very limited, are like old-fashioned tram-cars in build, seats running lengthwise, with outside platforms at each end; they are intended to hold 12 passengers.

The goods trucks are mostly open low-sided trucks, 12 feet long by 7 feet wide approximately, height of floor 2 feet above rail level. They are said to be of too light construction for the loads (4.92 tons) put in them, and are apt to sag in the middle.

These trucks are side-loading, the sides being detachable, but they can also be used for end loading. There are also a few closed trucks, used for carrying perishable goods, such as bread, meat, fruit, etc., and also for mails and passengers' luggage.

The water trucks are built of iron, closed on top, and hold about 900 gallons of water.

The usual composition of a train on the Swakopmund-Karibib section is one passenger coach, one tank truck, and four or five goods trucks. Above Karibib, where the gradients are easier, one or two extra goods trucks can be added.

The light engines are used coupled together in pairs, back to back, so that one driver can attend to the two engines. The engines on the Karibib-Windhoek section are said to last well, but on the Swakopmund-Jakalswater section, owing to the bad water and heavy gradients, the engines are in very bad repair, many of them leak badly, and the boiler tubes give constant trouble.

Fuel.—The fuel used consists of small oval briquettes of compressed coal, beyond Karibib it is supplemented with wood. A small quantity of coal is stored at each station, the main bulk (about 10,000 tons in July 1903) being kept at Swakopmund.

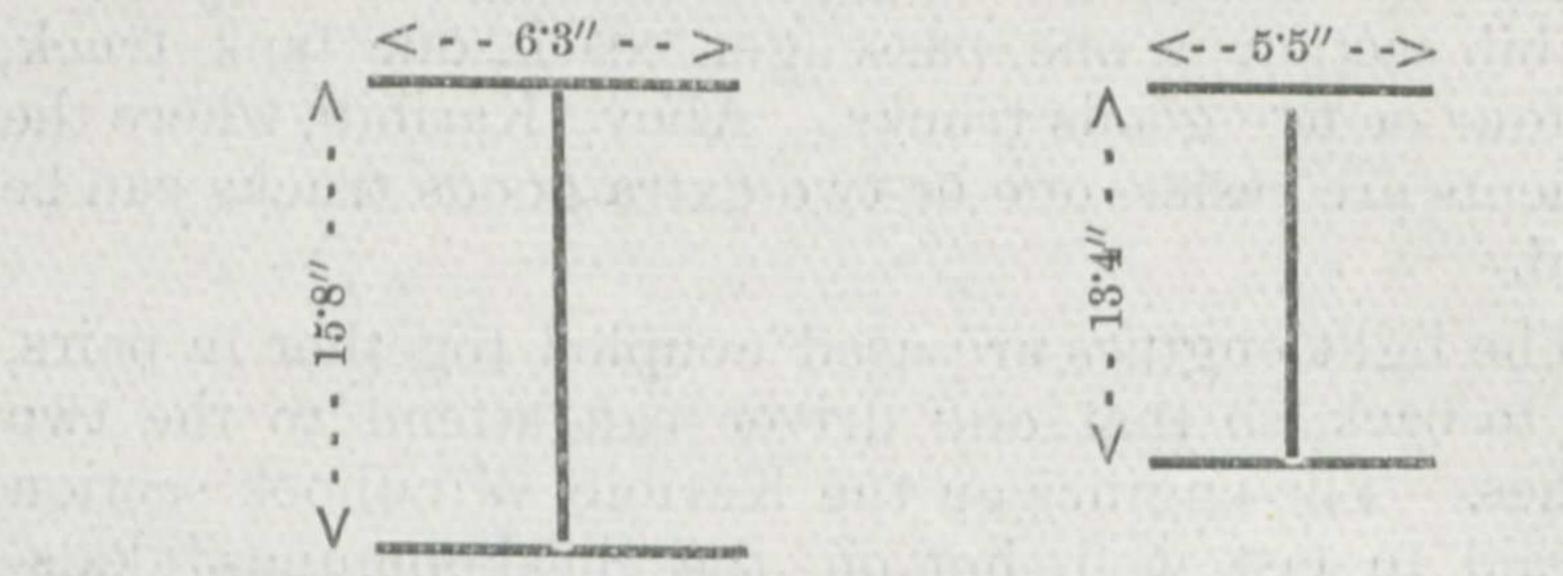
Water.—The scarcity of water and the difficulty of getting at it made themselves much felt during the construction of the line, and at many stations deep borings into rock were necessary.

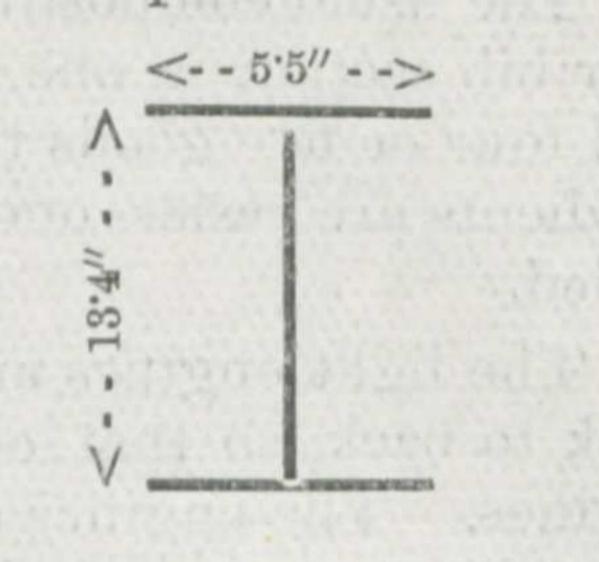
Some water is now obtainable at almost all stations, but at many of them in the Swakopmund-Karibib section the quantity is very small. At Khan River, Richthofen, and Swakopmund stations, which have the most important wells in the above section, the water is very injurious to the engines: at the two former places on account of the salt, and at Swakopmund owing to the lime contained in it. Consequently water from Karibib is largely used between this place and Swakopmund, some 6,600 gallons being sent away from Karibib daily.

Workshops.—The main workshops, with all necessary machinery for the repair of locomotives and vehicles, are at Karibib. There is a small workshop at Swakopmund, and there are running sheds at Khan River, Jakalswater, Waldau, and Windhoek.

Bridges.—The usual form of bridge is a plain girder bridge of two standard spans, 6 mètres 80 centimètres

(22 feet 4 inches) and 4 mètres 70 centimètres (15 feet 5 inches), on pillars of masonry or imported timber. The sections of the girders for these spans are—





respectively.

There are also lattice girder bridges of 65 feet span, erected on masonry pillars. The two principal bridges are those over the two branches of the Swakop to the south of Okahandya.

The first of these, at km. 314, is a plain girder bridge consisting of 51 spans of 22 feet 4 inches, supported on 6 masonry and 44 wooden pile supports, the greatest height of the rail above the river bed being 11 feet. The second of these bridges, at km. 319, is a lattice girder bridge, 9 spans of 65 feet, each on masonry pillars. (These bridges and the one at km. 191 are shown on attached sketch.)

The other principal bridges are:-

Khan River - km. 58, small timber bridge. Dorst River - km. 134, iron girder bridge. Kubas - km. 148, iron girder (11 spans) bridge.

In the section Okasise-Kumumbonde:--

2 girder bridges of 7 spans.

" bridge " 8 " " bridges " 4 "

In the section Waldau-Okahandya:-

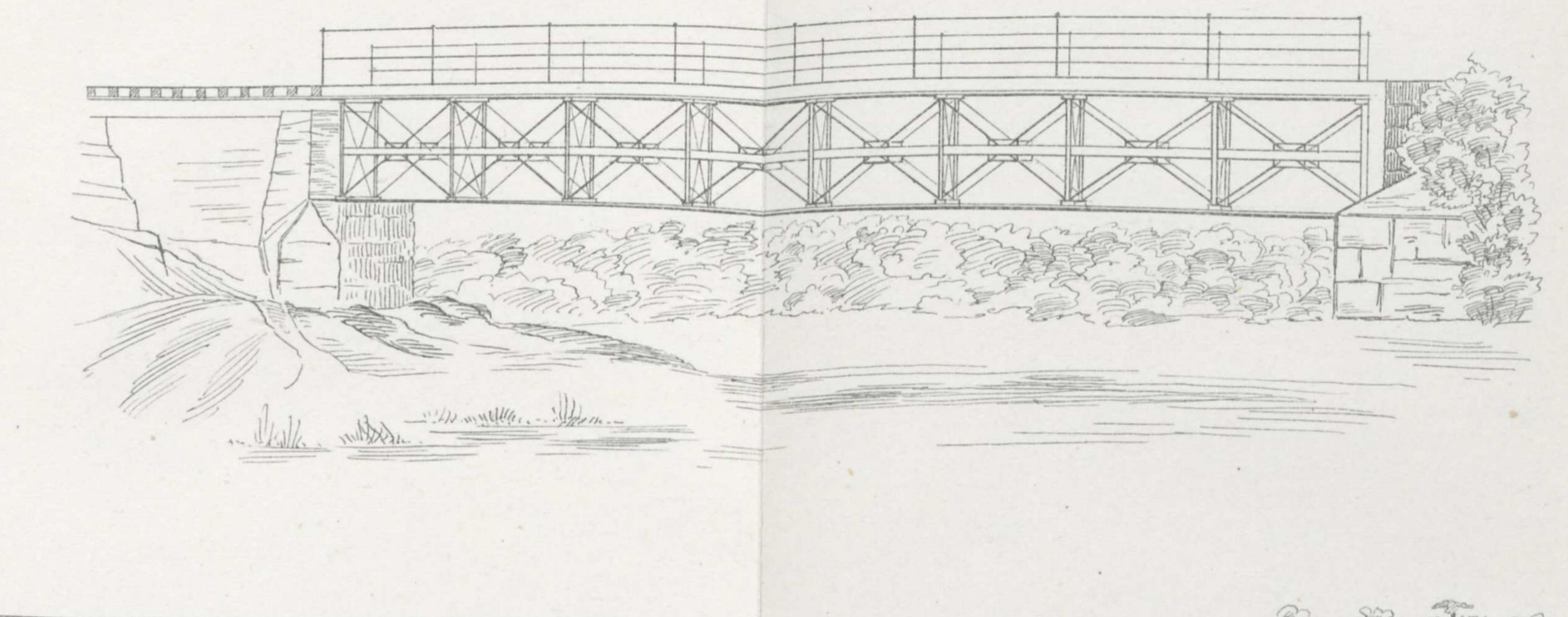
1 lattice girder bridge of 4 spans.

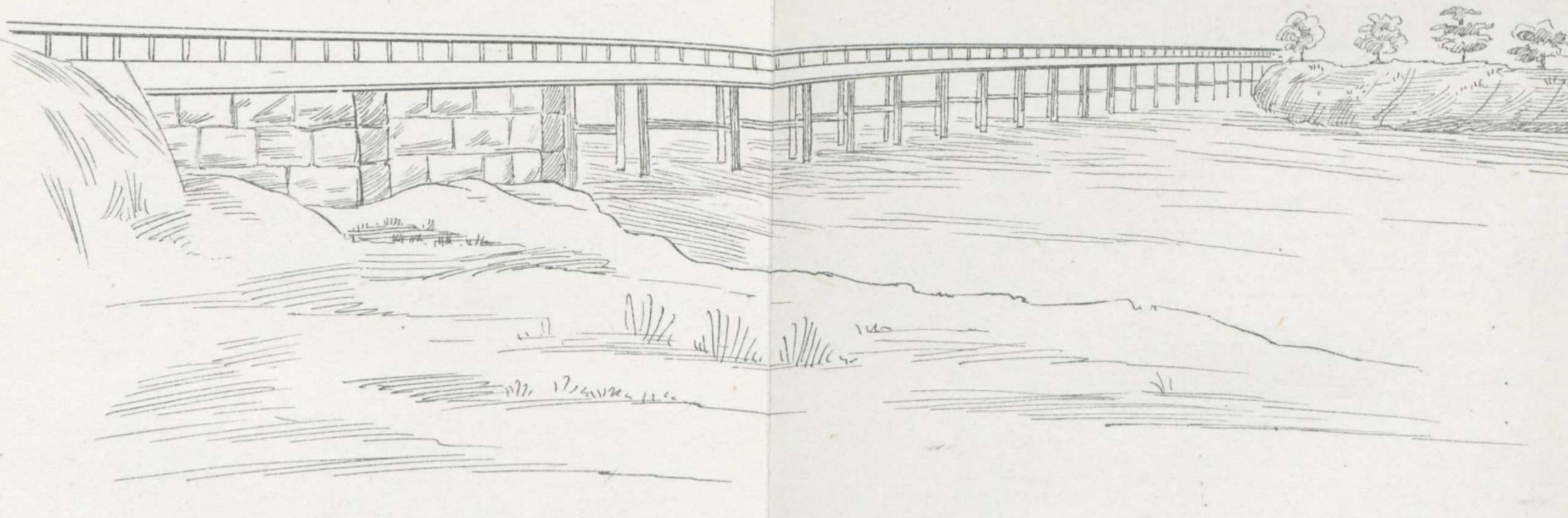
2 girder bridges ", 4 ",

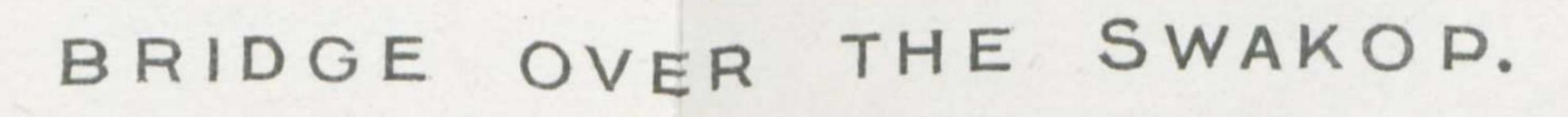
At Okapuka, km. 356:-

1 girder bridge of 10 spans.

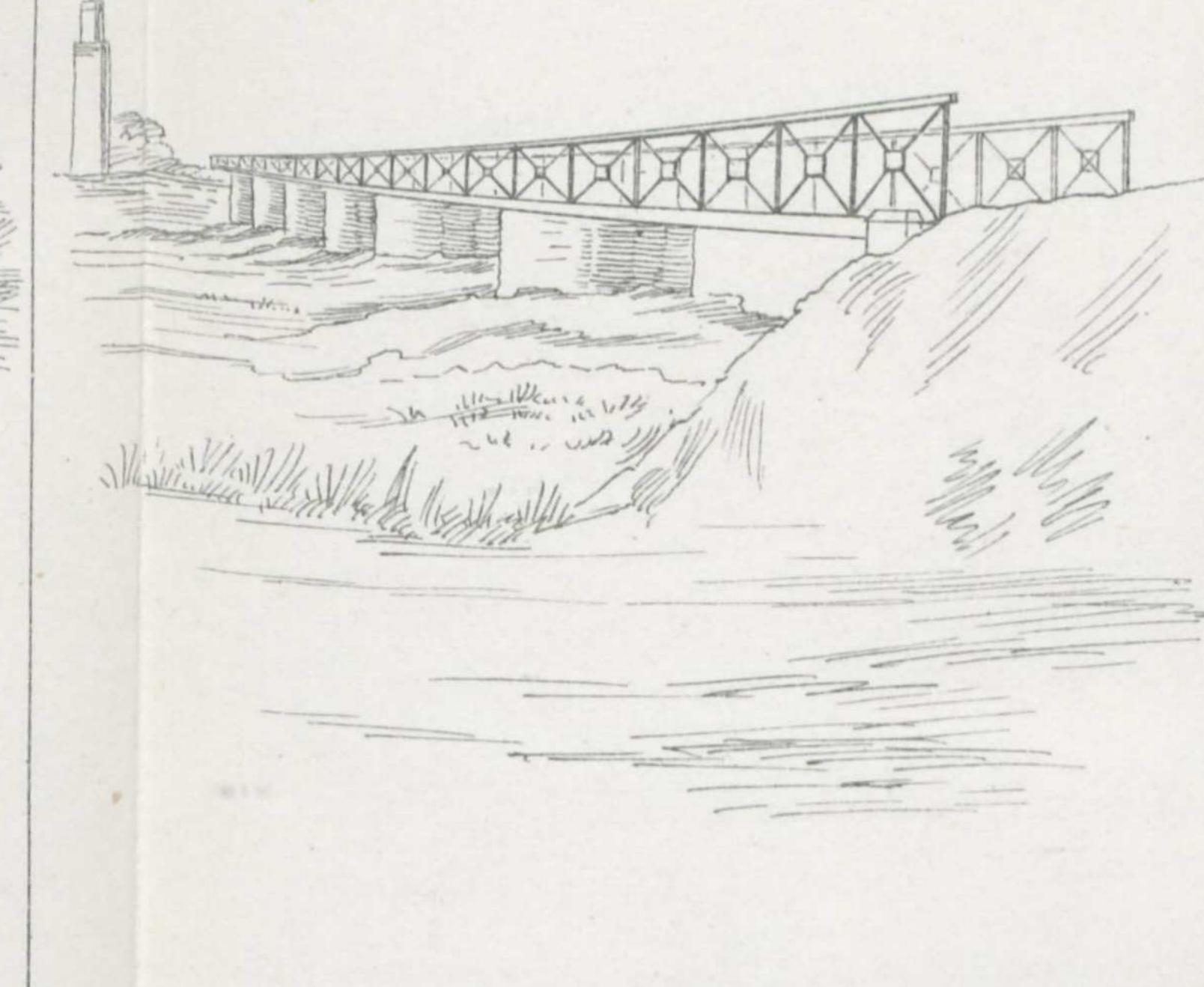
BRIDGE AT KILOMETRE 191.







2 miles South of OKAHANDYA (Km. 314)



BRIDGE OVER THE SWAKOP.

5 miles South of OKAHANDYA (Km.319)

Culverts.—The usual form of culvert consists of a corrugated iron tube 3 feet $3\frac{1}{2}$ inches in diameter and 16 feet 4 inches long, placed through an embankment.

An itinerary of the railway is given in Appendix V.

The following railways have been proposed at various Proposed Railways.

- 1. A line to the Otavi Mines, either-
 - (a) From some point on the northern portion of the coast of German South-West Africa.
 - (b) As a continuation of the projected Portuguese railway from Mossamedes to Humbe on the Kunene River.
 - (c) A branch line from the Swakopmund-Windhoek Railway.
 - (d) From Swakopmund direct.
- 2. An extension of the Swakopmund-Windhoek Railway into Bechuanaland.
- 3. A line inland from Lüderitz Bay.

Of these only 1 (d) has been decided on. The Anglo-German Syndicate, which owns the Otavi Mines, announced in May 1903 that they were about to construct a line from Swakopmund to Otavi. The gauge will be 23.63 inches, and the route will follow the course of the old transport road as far as Usakos. It is thought unlikely that it will go to Karibib, but will remain on the right bank of the Karibib River until it strikes the main Karibib-Omaruru road, the course of which it will follow to the north. The line is to be completed in 1906.

The capital required (£1,000,000) was raised by the South-West Africa Company in conjunction with certain leading German financiers.

Connection with the present railway by a line from Omaruru to Karibib is also under consideration.

It is still hoped that a combination of 1 (b) and 2 may eventually be carried out if financial difficulties can be overcome.

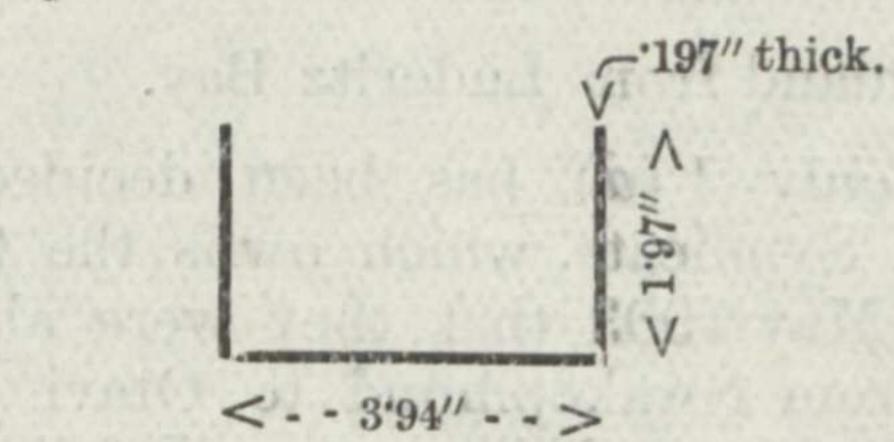
Cable.

Swakopmund is connected, on the Eastern Cable Company's system, with Cape Town and Mossamedes. The cable lands in British territory about 4½ miles north of Walfisch Bay, and is brought into a hut in which are the connections with a loop of cable which runs to Swakopmund. In this latter place is the office, which is under German control.

Telegraphs and Telephones.

The only telegraph line in the colony follows the rail-way from Swakopmund to Windhoek. There are telephone systems in Swakopmund, Karibib, and Windhoek, which are connected by wires run on the same poles as the telegraph wires. The main stations, i.e. Swakopmund, Khan River, Jakalswater, Karibib, Okahandya, and Windhoek, are fitted with telegraphs (sounder) and telephones, and the others with telephones only. The poles are made of channel iron, 28 feet 8½ inches long, spaced approximately 75 yards apart.

Section of pole :--



From Swakopmund to Karibib the telegraph wire is a single 10-gauge iron wire on porcelain insulators, and the telephone wires are two 14-gauge iron wires on ebonite insulators of a similar pattern to the F.S. insulator in use in the British service. Beyond Karibib the telegraph wire is copper, the telephone wires are the same, while all insulators are porcelain.

The telegraph poles are noteworthy as, in the Swakop-mund-Karibib section where the country is unwooded, they would be the only material available locally for the repair of bridges that had been destroyed. For this purpose they are eminently suitable, as two of them bolted together back to back would make a serviceable girder. The country in this section is so dry that the telegraph wires could be laid on the ground without hurt.

The telegraphic termini to which cables from Europe can be addressed are Swakopmund, Karibib, Okahandya, and Windhoek. Telegrams to other places in the colony are distributed from them as follows:—

1. From Swakopmund.—To Cape Cross, Jakalswater, and Kubas.

Marking

Competition

cadoons.

- 2. From Karibib.—To Grootfontein, Okombahe, Omaruru, Otavi, Otjimbingue, and Outjo.
- 3. From Okahandya.—To Waterberg.
- 4. From Windhoek.—To Gibeon, Gobabis, Haris, Hatzamas, Hohewarte, Keetmanshoop, Kuis, Maltahöhe, Marienthal, Rehoboth, and Seeis.

Telegrams for Kubub and Lüderitz Bay are sent on by steamer either from Swakopmund or Port Nolloth (C.C.), and those for Bethanien, Ramans Drift, Ukamas, and Warmbad are sent on by the fortnightly post from O'okiep (C.C.).

Away from the railway both to the north and to the Heliosouth there is an extensive system of heliograph signalling graph. between the main military stations. In the north Outjo is in communication with Karibib, and in the south Gibeon and Keetmanshoop are in communication with Windhoek.

Inland water communications are non-existent, as Inland neither the Orange nor the Kunene Rivers are navigable Water for practicable purposes.

Communications.

The Postal Service is under a Post Director, who is Postal stationed at Windhoek.

Service.

There are about 64 large and small post offices in the colony, the smaller ones being merely agencies for the distribution and collection of letters.

There is bi-weekly postal service both ways on the railway between Swakopmund and Windhoek, and from the main stations on the line there is periodical postal communication by mounted messengers, small horsed-carts or ox-wagons according to circumstances, to all the principal places in the colony.

The fortnightly overland service from the districts in the south of the colony viâ Steinkopf and Warmbad to Cape Town, which was interrupted during the South African War, has been re-established.

Maritime Communications. Communication with Europe is by the Woermann Line steamers, running to and from Hamburg, and by a small steamer which runs every four weeks from Cape Town to Port Nolloth, Lüderitz Bay, Walfisch Bay, Swakopmund, Cape Cross, and back to Cape Town, connecting there with the English mail steamers.

One Woermann Line steamer leaves Hamburg on the 30th and one on the 15th of every month. The former goes direct to Swakopmund; the latter calls at several Portuguese ports on the West Coast of Africa, and takes 32 days to reach Swakopmund.

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CHAPTER III.

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AGRICULTURE, MINES, COMMERCE, COINAGE, TRANS-PORT, ANIMALS.

Agriculture cannot be said to have much importance, Agriculexcept in the northern districts, and even there drought ture. and locust plagues have to be contended with.

The most flourishing form of culture is market gardening, and all kinds of vegetables and fruits are grown.

An English Company has had for many years a concession for working guano at Cape Cross, and on it is an export tax of £1 per ton; but it was recently stated that the guano deposits are worked out, and that the settlement is to be abandoned during the present year. Vines have been started in the centre of the country, and are doing well.

Special attention is being paid to tobacco-growing, both in the north and south, and the crops obtained are good.

Experiments are being made in cotton-growing, and samples from the Okahandya country have been well reported on.

Great expectations were formed of the mineral wealth, Mines. but so far they have not been realised; the geological nature of the country being such that the lodes are unreliable.

The distance from the coast, and the consequent difficulty and high cost of transport, and in some cases want of water, are serious obstacles to the development of the mining industry.

s 31258.

So far it is with the copper mines that most progress has been made. The principal ones are the Otavi Mines. It has recently been stated that they will probably be worked out in eight years. There are, however, reported to be much more extensive lodes some 30 miles to the northward of Otavi.

Other known copper mines which are being investigated are at Ausis, Guchab, Nagaib, Tumeb, and Gorob (93 miles north of Swakopmund).

Gold has been found and worked to some extent, principally at Ubib. Silver, tin, lead, and precious stones are said to exist.

Commerce. German South-West Africa has been the field of action for a number of companies, who have obtained concessions of all kinds, but their fortunes have been very varied.

On the attached sketch map can be seen the areas of their several concessions in 1902, as well as the amount of the Government and reserved land.

In 1902 the value of the imports was £428,377, and of the exports £110,648.

Of the former, £361,438 came from Germany, £53,974 from Cape Colony, and £9,307 from England. Of the exports in 1902 the largest were:—

					£
Guano -			-	-	42,694
Sealskin	Sel-sel	i died	1	STreet.	2,549
Horns -		Socialist	1-0	4	2,729
Ostrich feathers	-	-	-		4,553
Live cattle -	-		72.5		51,181

Principal trading companies and firms.

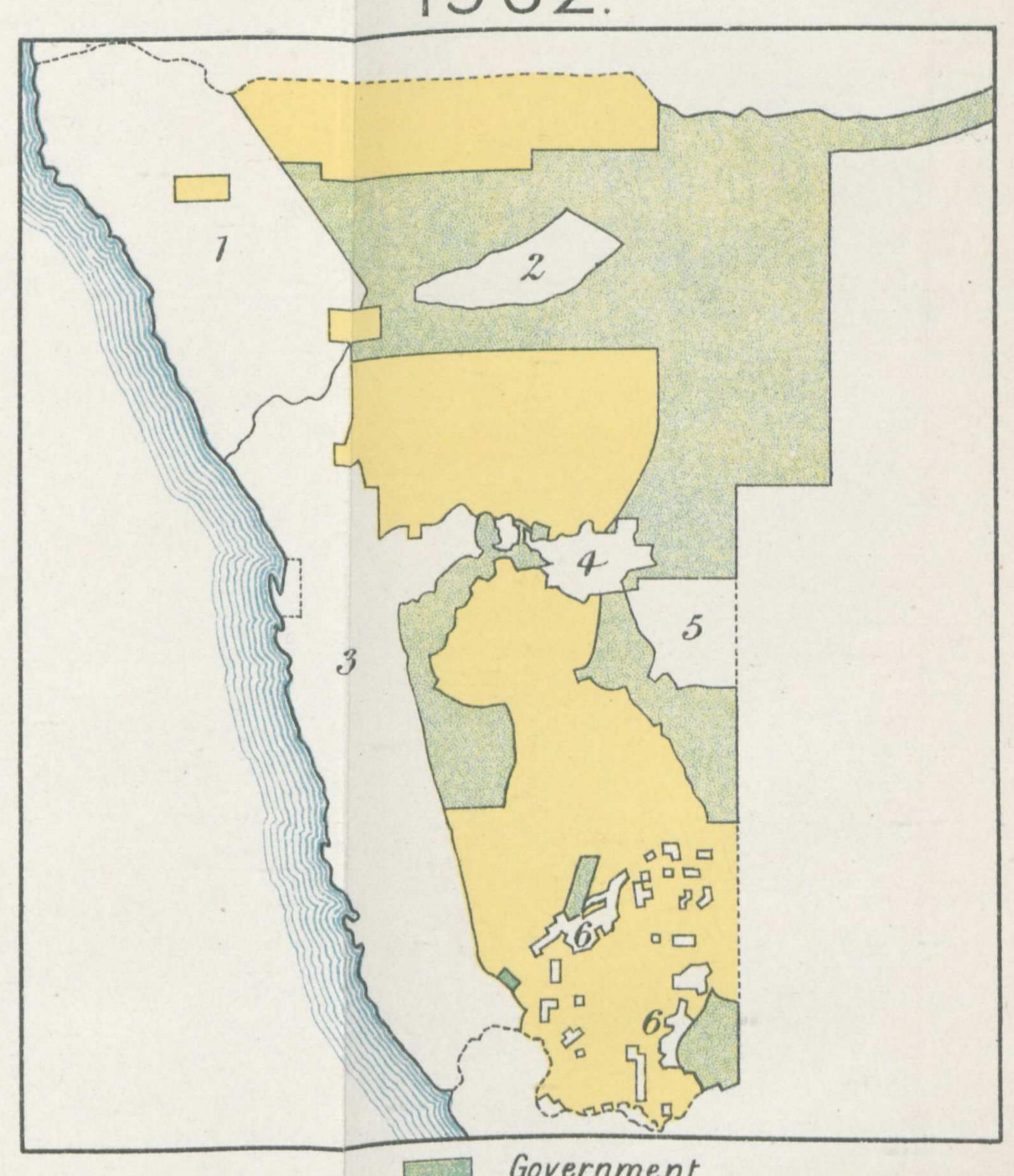
Price of Living.

A list of commercial firms is given in Appendix III.

Owing to the high sea freight, and to the slow and difficult transport causing high land freight, foodstuffs and the necessities of life are very dear. Prices vary in the different districts according to their distance and accessibility from the coast.

SKETCH showing ownership of Land in

GERMAN S.W. AFRICA.



- Government
- Reservate
- Land belonging to Companies.
- Kaoko Land u Minen Gesellschaft.
- 2. South West African Comp.
- 3. Kolonial Ges für Deutsch Südwest Afrika.
- 4. Siedelungs Gesellschaft.
- 5. Hanseatische Land u Minen Gesellschaft.
- 6. South African Territories.

The following comparative table of prices in Swakop-mund, Windhoek, and Rehoboth was prepared by a firm in German South-West Africa in 1903:—

	In Swakopmund.	In Windhoek.	In Rehoboth.
dative translationer at	Shillings.	Shillings.	Shillings.
Rice, per 100 lbs	16	221	28-30
Coffee, " -	90	90	120
Sugar, " - Meal, coarse,	28	35	40
per 200 lbs.	34	45	60
" fine, " 100 "	191	271	35
Potatoes, ", 100 ",	18	35	40
Eggs, per dozen -	31-4	3-31	3
Munich Beer, per bottle	11	2	2
Brandy, per bottle -	4-12	5-121	$6-12\frac{1}{2}$
Beef, per lb	TES TO THIE	6d.	THE LIET R
Mutton, ,,		6d.	
Pork, ,,		1s.	

European artisans—carpenters, stonemasons, lock-Labour smiths, painters, tailors, and shoemakers—can earn 15 to and 20 marks a day: not a very attractive rate considering Wages. the cost of living.

The average monthly wages for natives are: Male, 15s.; female, 10s., with, in addition, about 1s. a day for food.

German coinage and weights and measures are used Coinage. in the colony. English gold and silver are frequently met with, and are as readily accepted as German; a shilling being taken as equal to a mark.

The ox-wagon, with spans of 16 to 20 oxen, is the vehicles. vehicle in general use for transport purposes; many of these wagons are imported from Cape Colony, and are of similar patterns to those employed there. They carry 4,400 to 6,600 lbs.; they average 12 to 14 miles a day, except in specially difficult parts of the country, as for instance, when crossing the strip of sand dunes along the coast. No reliable figures are to hand as to the number of ox-wagons in the country. The oxen are, it is said, accustomed to go three or four days without

water and with very little forage. The cost of a large wagon with cover is about £135.

The difficulties of the roads, the frequency of accidental delays, and the number of casualties which occur among the oxen, necessitating a reserve always being taken, all combine to make the cost of transport of goods by ox-wagon very high. It varies in accordance with difficulties of the route between 1 mark and 1.50 marks per ton per kilometre.

The recent improvements in the main roads have permitted the use of a certain number of light carts with four or six horses for passenger and postal service. These have covered seats for two persons besides the driver. They travel as far as 30 miles a day.

Before the railway was made the fare for a passenger was 120 marks for the journey of 237 miles, from Swakop-mund to Windhoek.

Horses.

The German Official Annual Report for 1902-3 gives the number of horses in the colony as follows:—

Cu III						200	446
Stallions	-	-					
Mares	1 07	C LIVE	11-	-	-	197-1	2,470
Geldings			-	-	- 10	16/4	1,146
						-	1,203
Foals	TER IS	100	THE PERSON NAMED IN				
					-		FOOF
					T	otal	5,265

H. von François in his book speaks of the majority of horses being the usual South African country-breds, with their well-known steady amble and great lasting powers, but ill suited for heavy draught purposes; since he wrote, however, stallions have been imported from Germany and other European countries.

At the time of the Witbooi rebellion, horses were imported from Argentina; they are said to have done well, and some are again being brought over from there for the troops now engaged against the Hereros.

There is a horse-breeding establishment at Nauchas (or Nauas) close to Rehoboth, formerly under the military authorities, but now directly under the civil govern-

ment, and horses are not handed over to the army till fit for work. There is also a depôt for mares at Areb.

Horse sickness is very prevalent during the rainy season. In 1889-90, 4,000 horses are said to have died, but the number of deaths annually is said to be decreasing, only a small number having occurred in 1902 and 1903. Two forms of this sickness are thus described:—

Dunnpaurdziekte is the most frequent and the most deadly; it comes on during the rainy season (November to May). Horses suffering from it congregate near men and houses. It begins suddenly with loss of appetite and heavy breathing, followed by a discharge, first from one, and then from both nostrils, which is yellow to begin with and afterwards resembles white foam; the flanks heave, breathing becomes more and more difficult, and the horse dies in convulsions; a yellow discharge continues some time after death.

Dikkopziekte is generally first noticed in the evening, the eyes being swollen and the appetite small and capricious. During the night the pains in the head and body become worse, and next morning the flanks are heaving, the animal dungs with difficulty, and his eyes become red and watery, then he probably lies down and nibbles restlessly at the grass, his legs become cold, and finally cramp comes on and he dies.

No certainty exists as to the causes of these two diseases, but they are specially prevalent in low-lying damp districts, and no certain cure has been found. Allowing grazing only when the grass is quite dry, keeping horses in stables during the dangerous season, and feeding them only on hay and dry fodder, have been tried, but are no certainties; while hay and dry fodder are at times enormously expensive.

The following places are said to be almost, if not entirely, free from these diseases—Ubib, Tinkas, Hotsas, and Nonidas, and horses sent to them are considered safe.

Aredareigas (near Windhoek) and Keetmanshoop are also very free from these diseases.

A stick of tobacco, in a litre of water with some sugar, is said to have cured horses suffering from Dunnpaard-ziekte; the natives add the urine of a woman.

Mules and Donkeys.

There are not many mules and donkeys in the territory, but they ought to do well, as mules suffer very little, and donkeys not at all, from the diseases which are so prevalent among horses.

The Official Annual Report gives the number of mules in 1903 as 88, all being in the Keetmanshoop district.

Camels.

In 1898 a private firm imported six camels and made experiments with them in transport work. They are said to have done well although quite the right class of camel was not obtained; the matter does not appear, however, to have been followed up, and there are now only a few camels employed for transport work.

Cattle.

German South-West Africa is essentially a cattle-producing, as distinct from an agricultural, country, and, in spite of rinderpest and Texas fever, which, in the last few years, have reduced the number of head by at least one half, cattle-breeding has assumed important dimensions. Koch's system of inoculation has been introduced, and with improved sanitary and quarantine arrangements it is hoped to stamp out rinderpest. Great expectations have been formed of the future prospects of the export trade in live cattle, and it is reported that a large amount of stock has been supplied to replace that which was exhausted during the South African War.

In the Swakop valley the natives live entirely on their cattle and flocks, and from the railway east of Kubas many herds can be seen grazing, especially in the neighbourhood of Okahandya.

There are three kinds of cattle:-

- 1. The Herero or Damara: medium-sized, long-legged, and well-built; suitable for draught.
- 2. The Ovambo: short-legged and plump, not quite so good as the Herero for draught purposes.

3. The Africander or Bastard: this breed came from a cross between Dutch and native cattle: good for heavy draught work, but slower and not so enduring as the Damara breed.

Some Simmenthal bulls have been imported to improve the native breeds, and satisfactory results have been obtained in the Government breeding establishments.

Numbers and prices are ever varying. The German Official Annual Report for 1902-3 gives the following figures :--

Bulls	-	-		-	-		2,146
Oxen	-	-					20,358
Cows	-	-	•	•			32,804
Heifers			a.aliran	tener		-	12,085
Calves	•					-	22,992
					T	otal	90,385

In 1902 the price of draught oxen was reported to be between £10 and £11, and the price of slaughter cattle about £7.

Oxen are also used for riding. Their breaking-in is effected when they are about one year old, and takes about a fortnight.

Some of the troops have at times been mounted on oxen, and they are a useful but slow substitute for horses during a bad sickness season.

There are Government breeding establishments for Sheep, Goats, sheep, goats, and pigs, and a few ostrich farms have been started. Sheep cost about 18s., goats 10s.

Pigs, and Ostriches.

The majority of the sheep are of the Steatopygous breed, and there were reported to be over 180,000 of these in the colony in 1903. The number of goats is given as about 157,000.

There are said to be considerable numbers of lions, Wild tigers, leopards, elephants, rhinoceri, zebras, and ante-Animals. lopes of various kinds in the colony, mostly in the northern half.

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CHAPTER IV.

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ETHNOGRAPHY.

The principal race divisions of the natives of German South-West Africa are:—

- 1. Hottentots.
- 2. Bushmen.
- 3. Bastards.
- 4. Bergdamaras.
- 5. Hereros.
- 6. Ovampos.

Hottentots. The Hottentots are principally in Namaland, and in the desert coast region; those living near Walfisch Bay are called Topnaers, and those further north, near Cape Cross, Zwartboiis.

A physical description of this well-known race is unnecessary, but the following are a few of their characteristics from the German point of view. Very hospitable and generous, but unreliable and improvident; a great deal of vanity in their nature; are very good linguists. Unchastity and drunkenness are rife. In their methods of making war they are inclined to cunning and treachery, with not many scruples as to the fairness of their actions. They can see and hear very long distances. The tribes living in the coast region are said to be very brave and faithful to their masters, and most of the Hottentot tribes are reported as being good rifle shots and trackers, and with marvellous powers of endurance. Many of them are mounted.

Their religion is not very intelligible, but they have a deity which they worship, and there is a good deal of superstition mixed up in it; a very large number of them are Christians.

As regards clothing they prefer European, and when they cannot get it they make trousers and coats out of skins.

The Hottentots are principally breeders and tenders of cattle, their dwelling-places are therefore generally near water and good grazing; but in the desert coast region they have no cattle and live mainly by hunting.

Their huts are made of rush-mats. As a rule whole families, irrespective of age and sex, live in one hut. Where necessary, protection against wild animals is obtained from a hedge of thorns built round each hut, and the warlike tribes surround their huts with a stone wall to guard against sudden night attacks.

The Hottentots are very liable to fever, and in places where it is prevalent many die of it. Syphilis has, unfortunately, spread very widely among them.

At the head of each tribe is a "captain," but except in the case of a particularly strong-willed man he has no very despotic powers, as in addition to a number of councillors who decide questions of peace and war, judicial matters, &c., all adults are entitled to speak and give their views, and any difference of opinion between the captain and the majority of the tribe leads to a splitting up into parties, and internal conflicts.

The original pure Hottentot race is said to be dying out very rapidly.

Bushmen are so similar to the Hottentots that to Bushmen. distinguish between them is often very difficult.

They are nearly naked, with at the most a loin cloth or small apron. There are 11 different tribes of Bushmen in various parts of the territory, but they have no fixed habitations, as they lead a wandering life.

They go about in bands of 50 to 60, with an elderly man as their leader, who, however, has not much authority.

They have no cattle, and their principal occupation is hunting, for which they use bows and poisoned arrows.

Their retiring, ignorant, and uncivilised nature, and the simple existence they lead, has caused them to be despised and oppressed by both Hottentots and Hereros.

In the fighting between the Germans and the followers of Witbooi, both sides found them very useful as spies. They are obedient to orders, and can be usefully employed in many ways, but have an inconvenient habit of disappearing without warning, especially after receipt of their wages.

The bushmen in Namaland speak the same language as the other natives there, but those in the north have a AND THE PARTY OF STREET STATE OF

special dialect.

Bastard was originally the name for a cross between Boer or Cape Colonist and Hottentot, but is now applied to every kind of cross between black and white of whatever degree. The Bastards are increasing enormously in numbers; they are exceptionally prolific.

They are to be found in specially large numbers in Rehoboth and Rietfontein (S.E.). The remainder are divided among the larger towns, such as Windhoek,

Otjimbingue, Omaruru, Tsaobis, and Guabib.

They dress in European fashion, generally making

their own clothes.

In places where they live permanently their houses are stone-built, of two or three rooms. When out with their herds they have mat huts.

In their characters they combine with the slimness and sagacity of the Hottentot the discretion and presence of mind of the Dutch, and are better workers than the other natives.

Many of them speak the various native dialects as well as Dutch.

Bergdamaras.

Bergdamaras are considered the lowest class among the natives, and are described as stupid and unintelligent. Physically they are short, broad, of great strength and muscle, and are very hardy.

Almost without exception they amputate the first joint of the little finger of the left hand, the idea being that it makes them grow taller.

Their clothing is usually limited to leather or skin aprons, except when they are employed in the service of Europeans. In their habits they are uncleanly.

The Bergdamaras may be divided into two classes: those who live in the mountains with an evil reputation

for robbery and ill-doing, and those who are in service in the towns. The dwelling-places of the former are selected in the most inaccessible and hidden parts of the mountains, with a view to forming safe refuges to retreat to after their thieving expeditions.

They dwell in family groups of 10 to 40, and the oldest man in the group has certain patriarchal rights but

little power.

Their numbers are estimated at 30,000.

Hereros are a tall well-built race, dark-coloured, and Hereros, with a variety of types of countenance among them.

All women on arriving at maturity have three of their lower front teeth extracted, which does not add to their

already none too great beauty.

Their clothing is of skins, and they also wear very long narrow leather thongs, which are wound round and round their bodies. Christian Hereros adopt European clothing.

In addition to their bows and arrows, clubs, and assegais of former days, many of them are now armed with European firearms (principally Martini-Henry's).

They had long and severe fighting with the Hottentots some 20 years ago, and succeeded in driving them out of the Swakop valley, and about five years ago when they rose against the Germans they fought well for a short time. They are also proving themselves good fighters during the present rising.

Their independent nature, and the idea they have that they are equal if not superior to any in the land, prevent the Hereros from entering much into service, except as cattleherds; they prefer a superior sort of place with other

natives under them.

They have exceptionally good memory, sight, and hearing, and are good trackers, but have not much aptitude for learning or for languages.

In their character there is not much that is good, and the Herero is said to steal, lie, betray, and even murder, whenever he can. Cowardice and avarice are also especially marked.

They are a nomad pastoral tribe, moving about in search of good water and grazing for their cattle, and only

in the few places where water and grass are to be had all the year round are there any permanent settlements.

In the Swakop and Khan River valleys their villages are to be found in large numbers. They require very little water for their personal use, and generally conceal their temporary villages some little distance from where their cattle are grazing and watering.

The losses in cattle, through rinderpest, have been so serious that the Hereros have been reduced to great extremities in late years, and are said now to live mainly on wild berries, tobacco, and a little milk. Many are said to have died of starvation.

Milk in various forms is their favourite food. They are fond of alcohol when they can get it.

Their temporary habitations are huts (called "Pontoks"), made of brushwood on a framework of stakes, and covered over with a mixture of mud, blood, and cowdung. A settlement of pontoks is generally surrounded by a thorn fence.

As to their religion, each tribe or settlement has a god which it worships; but their principal oracle is the soul of a deceased father, and the burial of a father is their most serious and important ceremony. About 10 per cent. of the Hereros have become Christians.

There are two institutions peculiar to the Hereros. One is the "Eanda," which has reference to matters of property, relationship, and heritage. There are about eight principal "Eandas," each with several branches or subeandas. All matters of heritage and property are settled in the "Eanda" to which the families concerned belong. The rule of heritage is that everything, *i.e.*, both rank and property of a dead man, go to the eldest son of the eldest sister or female cousin of the deceased.

The other institution, the "Öruso," is also a collection of families, but has nothing to do with blood relationship, and is concerned with matters of religion, rules of food, ceremonies, and habits of life.

The Herero is governed by the rules of the above institutions, but judicial matters and quarrels are decided

by the head man of the settlement, who gains his position by reason of his superior wealth—he is called the "Omuhona."

Several settlements will group themselves under a chief selected for his wealth and superior position. He decides disputes between the settlements, but owing to the wandering nature of the Hereros, his power is never of a very stable or permanent nature.

The chief of all the Hereros, a man of the name of Solomon, lives at Okahandya, and is a person of no little wealth and importance in the country. He is said to possess from 10,000 to 20,000 head of cattle. All the country in the Okahandya district is recognised by the government as belonging to him, and anyone wishing to purchase land has to buy it from him.

Their numbers are estimated at 80,000.

The Ovampos or Ovambos are a large and powerful Ovampos tribe living in the northern part of the territory in the (Ovamvalley of the Kunene and to the south-west of the Etosa Pan. From the accounts given by people who have visited their country, they are a fine and independent race, and they refuse to recognise German rule. It is said that they are friendly and hospitable to Englishmen but not to Germans, and that if left alone they are a peaceful, pastoral, and agricultural people.

Many of them come south to work and are the best native labourers in the colony. Some recent murders of Germans in the Ovampo country have not so far been punished, the reason being, probably, that the Ovampos are a large well-armed nation, and their country a very difficult one in which to conduct military operations, owing to want of water in the dry season and malarial fever in the wet weather.

It is considered that the most practical way of conquering the Ovampos would be by means of native troops, Hottentots, and Bastards, who require little water, and are not so susceptible as Europeans to fever.

It is estimated that the Ovampos number over 100,000. Ovampoland is said to be fatal to horses brought into it, and there are only a few to be found in the country.

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CHAPTER V.

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MILITARY AND POLICE FORCES.

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The personnel of the Schutztruppen, or Colonial Troops, of Service. is recruited from volunteers from the German Imperial Army. Non-commissioned officers and men must have not less than two years' service, and be of good character and exceptional physique. Their engagement is for three and a half years. At the expiration of the three and a half years they pass into the reserve; free grants of land are made to those who remain in the colony; as long as they are in the reserve they are liable to be called out by the commander of the troops at the regular instructional periods, or if necessary, to reinforce the embodied troops.

The following are enlisted in addition:-

- (1) German subjects liable to military service settled in the colony.
- (2) Young Germans living in the colony, holding certificates entitling them to the one-year volunteer service.

Recently a Bill has been passed by which German subjects residing anywhere abroad (outside Europe) can perform their military service in the Schutztruppen (Colonial Troops) of German South-West Africa.

Officers must have at least three years' service, must pass a rigorous medical examination, and be specially recommended.

Administration.

The Emperor is the Commander-in-Chief of the colonial troops, and next to him is the Chancellor, with whom is associated a Board of Officers, which has charge of all matters relating to colonial troops.

In the colony itself, the Governor, not necessarily a military officer, represents the chief military authority;

he can dispose of the colonial troops as he thinks fit and they may be employed in civil capacities if military considerations permit.

In immediate command of the troops is the "Kommandeur," who is responsible for drill, discipline, equipment, &c.

In case of difference of opinion between him and the Governor, appeal is made to the Board and, if necessary, to the Emperor.

Pay, clothing, subsistence, armament, and accounts Intendarce regulated by the Intendance department, which is ance. subordinate to the "Kommandeur," on whom rests the responsibility.

Annual rates of pay	are as	s follo	ws:-		PAY Marks.	Rates of Pay.
Commander	- 1777		Strong	40.0	ATTACH PROPERTY.	
Staff Officer	Mark	- day	20.7	- 1	12,000	
Captain -	de Race	by-little	-	-	8,500	
1st Lieutenant	Charles of	-1000	- 200	in the	6,000	
2nd Lieutenant		-	Pian	-88	5,000	
Paymaster-Aspira	nt	43 70	- 1000	-	4,000-4,500	
Chief Artificer	-	*Hints	-	will	4,000-4,500	
Sergeant-Major				1	1,500	
Sergeant Corporal Lance-Corporal	Exc	lusive		ee {	1,300 1,200 1,100	
Trooper Chief Staff Surge Staff Surgeon	-			•	10,000 8,500	
Assistant Surgeon Chief Hospital As Hospital Assistan Veterinary Surgeon Assistant Surgeon Chief Armourer	sst. } t on	free i	ation	s. (5,000 1,300 1,200 5,000 4,500 4,000-4,500	

Special and increased rates of pension are given, Pensions. varying with length of service, time of service in the colony counting double.

Military expeditions in the interior may, by imperial decree, be made to count as a year's service.

Special pensions are also given for wounds and for diseases contracted on service. Widows and children receive gratuities.

Leave of Absence.

Four months' leave to Europe on full pay and with free passage is given during the term of three and a half years' service. If service in the colony is prolonged, leave is again due after three years.

Leave for field officers is given by the Chancellor, for junior officers by the Kommandeur.

In cases of sick leave, the Chancellor can give up to nine months, anything over that time is given by the Emperor.

Uniform.

The full-dress uniform of the troops is a khaki corduroy coat (turning white on being washed) with light blue facings, and buttons of white metal; trousers of the same material or breeches with leather leggings and heavy boots. The full-dress headdress is a grey felt hat turned up on the right-hand side.

The undress uniform is a khaki drill coat, of almost identical cut as that of the English service dress, with light blue piping and white metal buttons, trousers of the same material with blue piping down the seams. The undress cap is grey with a blue band and of the ordinary German pattern.

Equipment. Equipment is of brown leather, and consists of a waist-belt with frog and with two braces. On the right brace are two ammunition pouches and on the left three. It has also been reported that on some of the waist-belts there are 10 pockets, each taking two clips of five cartridges; with these and the pockets on the braces, 120 rounds per man can be carried. Mounted men carry their rifles in a bucket on the front part of the saddle on the off-side. The saddlery is reported to be very heavy. Brown leather haversack. Tin waterbottle in leather case.

Armament.

descens.

According to the latest information, N.C.O.'s and men are armed with the 88 Mauser rifle. The exact pattern

of the field guns is not known, but their calibre is believed to be 7.7 cm., and the mountain gun is about the size of our 7-pounder. The machine guns are reported to be Maxims.

There used to be a horse depôt in connection with the Remounts. breeding establishment, both under the military authorities; but, as already mentioned, the latter is now under the civil government and the former has been done away with, horses being kept in the breeding establishment till fit for work and then issued to the troops.

The animals ridden by the Mounted Infantry are reported as useful and in good condition.

As far as can be ascertained the regular military forces Organisaconsist of:tion.

- 3* Batteries Field Artillery (4 guns each).
- 1 Battery Mountain Artillery (4 guns).
- 1 Battery Machine guns (4 guns).
- 4 Companies Mounted Infantry, 120 strong, divided into 4 sections, which are further sub-divided into groups of 11 men.

The men of these 4 Companies are trained and equipped as Mounted Infantry, but do not all possess horses in peace time; on mobilisation, the number of horses required would be made up from the Government breeding establishment. The men are reported as heavy and also bad riders. The Field and Mountain guns are drawn by six mules. Native or Bastard drivers are employed in peace time, who would be replaced by reservists on mobilisation. The detachments are all mounted. Pack saddle equipment for the Mountain Battery is kept in store at Okahandya for use if required.

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divisits.

^{*} This number is given in Lt. R. S. McClintock's report after his visit to the colony in 1903, but in the German accounts of the present operations in the colony, only one Field Battery is included in the strength of the military forces, and no mention is made in any book of reference to more than one Field Battery.

Distribution. The headquarter stations of the Mounted Infantry Companies are:—

Windhoek. Keetmanshoop.

Omaruru.
Outjo.

The company at Windhoek is kept concentrated there, but the others are mostly employed on police work in scattered detachments, consisting often of two or three men only.

The following are some of the places at which detachments are stationed:—

Rehoboth.
Gibeon.
Bethanien.
Otjimbingue.
Gobabis.
Seeis.
Warmbad.

Outjo.
Swakopmund, 36 men
Karibib, 30 men

Franzfontein.
Okahandya.
Gross Barmen.
Marienthal.
Keetmanshoop.

Omaruru.
Tsaobis.
Okombahe.

from the Omaruru Company.

The Artillery is said to be distributed as follows:-

Windhoek - 1 Field Battery Keetmanshoop 2 ,, guns)

Gibeon - 1 ,, gun 1 Battery.

Gobabis - 1 ,, ,,

Omaruru - 2 ,, guns } 1 Battery.
Outjo - - 2 ,, ,,

Okahandya - 1 Mountain Battery.

- 2 Machine Gun Batteries. To be transferred to Otjimukoka when the barracks there are built.

Strength.

The strength of the regular military forces, in 1903 was, according to the estimates for that year:—

41 Officers.

10 Medical Officers.

3 Veterinary Officers.

772 N.C.O.'s and men.

According to the estimates for 1904, a reduction of 218 was to be made in the number of N.C.O.'s and men. It was considered that this reduction was made possible by the formation of a European police force of 80 and a native company of 120. Since the framing of the estimates for 1904, however, there have been serious disturbances among the natives, and it is very unlikely that this proposed reduction in the strength of the military forces will now be carried out.*

A small militia force of Rehoboth Bastards was raised Native in 1895; about 15 to 20 men being trained annually. Troops. The men are armed and fed by the Government, but clothe themselves. First year's training is six weeks, in subsequent years two to four weeks. Nothing is known at present regarding the officers for this force. The strength in 1903 was said to be about 200, but the value and reliability of this native militia is reported as doubtful.

In the estimates for 1904 provision is made for the formation of a company of native soldiers, 120 strong.

The estimates for 1904 make provision for the forma- Police tion of a European police force, consisting of 10 officers Force. and 70 men; as soon as it is formed the N.C.O.'s and men, numbering about 40, who have hitherto been detached from the regular troops for police duty, will no longer be required.

The police are under the civil authorities, and are scattered about in detachments in the towns and on the frontier.

There are also a certain number of native policemen, exactly how many is not known, but they are believed to number about 100.

To all the above may be added, in case of necessity, Reservists the reservists settled in the colony liable for service, and and Setthe old Boer settlers, who are also considered available. tlers. The Boers are encouraged to become German subjects, as then their sons are liable to military service in the colony.

^{*} For the strength of the forces now in the colony, dealing with the rising of the Hereros. (See page 9.)

The number of reservists in the colony was recently estimated at 780. Arms and equipment are kept in store for them; there are said to be 3,000 rifles at Windhoek and 300 at Otjimbingue.

Many German civilians have private Mauser rifles of modern pattern, but as a rule other Europeans are only allowed to have the 71 Mauser which can be purchased from the Government. Europeans are allowed by law to purchase 50 cartridges a month. No one in the colony can have a rifle or ammunition without a permit.

Natives.

Arming of All natives must obtain a licence to have a rifle; also the amount of ammunition they may have in their possession is limited. It was, however, considered likely that the natives had concealed stores of rifles (M.-H., Winchesters, and Remingtons) and ammunition. This has proved to be the case, as, when the natives rose in December, 1903, and January, 1904, it was found that a very large number of them were armed with rifles, either muzzle-loaders or breech-loaders. It is thought by the Germans that a large number of these rifles were smuggled through Portuguese territory, and the natives also obtained some from the Boers who came into the colony during the South African War.

Supplies and Ammunition.

The garrisons in the south are supplied from the depôt at Windhoek, those in the north from Karibib. (See pp. 29 and 35.)

The local depôts in the south for reserve supplies are at Gibeon and Keetmanshoop.

Defences.

There are no permanent defences in the colony, either at Swakopmund or elsewhere, except the defensible barracks at the larger stations, which are only intended as a protection against natives, and would be of no value against civilised troops. With the state of

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APPENDICES. de de la commission by Id. Col. Laffan, E.E., 1903-Junio 190

DESCRIPTION OF SOME OF THE WATERING PLACES ON

(In order to locate some of the places, approximate APPENDIX I.

Upper Rieffontein .- A spring in the bed of the List of "Wasserstellen" (Watering Places) and Springs.

> (Taken from "Nama and Damaraland," by H. von François, published in 1895.)

Windhoek District:-

Ongeama.

Aikeigas.

Klein-Aikeigas.

Aukeigab.

Kamanakub.

Goangeis.

Goreangab.

Gamams.

Gross Nubuamus.

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Klein-Nubuamus.

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Eros.

Ougos.

Kaemis.

Kaemis.
Tumiberaobis.

Uierams.

Aredareigas.

COLD SPRINGS.

Usa Kos.

Ubib.

Tinkas.

Gibeon.

Hoakha-Nas.

Kowas.

Berseba.

Goamus.

Besides a large number in the Waterberg and Grootfontein districts. of was dry. It is no miles wes

HOT SPRINGS.

Berseba.

Klein-Windhoek (3). Omapiu.

Gross-Windhoek (9). Omburo.

Barmen (Otjikango). Rehoboth. Klein-Barmen or Otji-

Aris (2). kango-Katiti.

Above are not all marked on map.

DESCRIPTION OF SOME OF THE WATERING PLACES ON THE EASTERN SIDE OF THE COLONY.

(Furnished by Lt.-Col. Laffan, R.E., 1903.)

(In order to locate some of the places, approximate distances have been inserted from a map.)

Upper Rietfontein.—A spring in the bed of the Epukiro River. Sufficient water at all times of the year for about 500 oxen.

Olifantskloof (in British territory). A spring in a rocky kloof, very variable. At times, even during the rainy season, there is not more than enough water for 16 oxen.

Between Rietfontein and Olifantskloof there are occasional "vleis" where water gathers after heavy rains, but there is no place where water can be found all the year round.

Sandfontein.—In spite of the name there is no spring here, only a dry watercourse in which water can be found only after exceptionally heavy rains.

About 4 miles N.W. of Sandfontein is a spring called Guruchas, which, when kept clear, yields enough water for about 40 oxen per diem.

Oas.—The nearest German police station to the frontier, occupied by a N.C.O. and two men. Water supply from a spring, yielding enough for about 600 oxen per diem. Oas is about 35 miles south-east of Gobabis.

Zachas.—A well, sufficient for about 200 oxen.

Gaus.—Formerly a spring. In the beginning of 1903 it was dry. It is 15 miles west of Oas.

Makam.—Spring and well, sufficient for about 500 oxen.

Guikus. — A well, sufficient for 100 oxen. It is between Oas and Gobabis.

Gobabis.—Headquarters of a military district, occupied by a lieutenant and about 40 men. Water supply from wells and a spring, sufficient for about 2,000 oxen.

Uikhanas.—Spring, sufficient for about 300 oxen if kept clear. It is 20 miles south of Oas.

Ara roams.—Well, very little water, only enough for 8 oxen per diem in 1903. It is about 12 miles south-east of Uikhanas.

Nuis.—Spring, enough for about 600 oxen. About 35 miles south of Ara roams.

Aminuis.—Spring and wells, water plentiful, German police station occupied by a N.C.O. and three men. About 15 miles south-west of Nuis.

Gubuoms.—Spring, enough for about 600 oxen.
About 15 miles south-east of Aminuis.

This is the last water on the road to Lehutitang, which is about six days' journey from it by ox-wagon.

Huguis.—Spring, enough for about 200 oxen. About 5 miles south of Aminuis.

Awadab and Nabusch.—Two wells, a few miles apart, in the dry bed of the Nosob River.

Hakosgeist, Oas, Naosanobis.—Springs, in the dry bed of the Nosob River, supply very uncertain; at times they run almost dry.

Ais.—At the junction of the White and Black Nosobs, water supply small and uncertain, from a spring in the bed of the Black Nosob.

Lehmwater.—About 8 miles N.E. of Ais, formerly a police station, supplied from a spring which has now dried up.

Guigandis.—On the road from Awadab to Gibeon. Well, enough for about 20 oxen only.

Nunib.—Spring, enough for about 200 oxen.

Gokhas.—Abundance of water in the Anob River, which is always flowing along this part of its course, but sinks underground again about a mile below Gokhas.

Goamus.—On the road from Gokhas to Gibeon, a strong spring.

Gibeon.—Headquarters of a district, with a garrison of about 40 men. Abundance of water from a spring and from pools in the bed of the Fish River.

Persip.—Eighteen wells, water sufficient for about 2,000 oxen. Persip and the following four places are on the road from Gokhas to Rietfontein.

Koes.—Police station, one N.C.O. and three men, strong spring, abundance of water.

Aninus.—Two wells, enough for about 400 oxen.

Kiriis.—Five or six wells, enough for about 500 oxen.

Hasuur.—German police station (one N.C.O. and three men). Two wells, water for about 100 oxen.

Rietfontein (Gordonia, British territory).—Abundance of water from springs.

From Rietfontein along both sides of the frontier down to the Orange River are the following:—

Schanskolk (German).—Well and dam, supply variable, cannot be relied on for more than two spans of oxen (of 20 each).

Withranz (British).—Wells and dam, enough for about 100 oxen.

Fonteintjes (German).—Wells, enough for about 50 oxen.

Hannapan (German).—Well, enough for about 200 oxen.

Middelpost (British).—Well, enough for about 300 oxen.

Saulstraat (British).—Well, variable, sometimes dry.

Klipdam (German).—Well and dam, enough for about 200 oxen.

Narogas (British).—Wells and dam, generally enough for 2,000 oxen.

Abiquas Pūts (British).—Well and dam. Dam often dry. Water in well very salt.

Witpan (German). -- Well, water very scarce.

Holpan (German). - Well, enough for about 100 oxen.

Withop (British).—Several wells with strong springs, enough for about 600 oxen.

Abiquas Aar (British).—Two wells, enough for about 300 oxen.

De Sconde's Dam or Davignab.—German police station (one N.C.O. and two men). Wells, enough for about 100 oxen, the dam is generally dry.

Sautpüts (British).—Well. The water is too salt for cattle to drink.

Van Rooi's Vlei (British).—One well with strong spring and two weaker ones.

Africa's Dam.—Water scarce. Dam often dry.

Kapütz (German).—Well with strong spring, water rather brackish, enough for about 2,000 oxen.

Ukamas.—German police station (one N.C.O. and three men). Several wells, enough for about 1,000 oxen.

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Nachab (German). - Well, enough for about 400 oxen.

Aries (British).-Spring, enough for about 400 oxen.

APPENDIX II.

POPULATION STATISTICS, 1st January, 1903. (Taken from Deutsches Kolonial-Blatt, 1904.)

TOTAL WHITE POPULATION ACCORDING TO SEX AND RESIDENCE.

				Mal	les.			Fem	ales.		Total	Native	
District.			Ad	ults.	Dave	Madal	Ad	ults.	~. ,		White	Females Married	Column
			Single.	Married.	Boys.	Total.	Single.	Married.	Girls.	Total.	tion.	toWhite Men.	10 & 11.
1.			2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Keetmanshoop			396	205	227	828	18	144	208	370	1,198	12	1,210
Gibeon			132	93	126	351	33	85	137	255	606	8	614
Gobabis			78	4	2	84	-	4	1	5	89	5 -	89
Windhoek -			714	168	130	1,012	32	146	125	303	1,315	14	1,329
Swakopmund			381	49	25	455	27	48	25	100	555	_	555
Karibib			142	40	21	203	10	42	26	78	281	-	281
Omaruru -			125	23	7	155	4	16	9	29	184	7	191
Outjo			145	15	12	172	5	13	7	25	197	1	198
Grootfontein -			69	25	37	131	18	25	41	84	215	-	215
Total, 1903		-	2,182	622	587	3,391	147	523	579	1,249	4,640	42	4,682
Total, 1902		-	1,981	588	707	3,276	116	517	726	1,359	4,635	39	4,674
Increase or d	ecres	ise	+ 201	+ 84	- 120	+ 115	+ 31	+6	- 147	- 110	+ 5	+ 3	+ 8

74

TOTAL WHITE POPULATION according to NATIONALITY and RESIDENCE.

		Ties !		Text !	N	ationalit	y.			53	To	tal.	
District.		Germans.	Boers and Cape Colonists.	English.	Austrians.	Swedes and Norwegians.	Russians.	Dutch.	Without Nationality.	Other Nation- alities.	1903.	1902.	Increase or de crease.
Keetmanshoop		314	798	73	1	2	_	12		10	1,210	1,523	- 31
Gibeon		373	-	162	_		-	2	71	6	614	506	+ 10
Gobabis		86	3		_	-	_	_	-	-	89	94	180
Windhoek		1,119		178	9	10	2	7	- 3	1	1,329	1,117	+ 21
Swakopmund		474	2	21	28	9		5	11	5	555	617	- 6
Karibib	-	259	6	4	2	-	2	2	4	2	281	227	+ 5
Omaruru		164	7	7	-	11	1	-	1	-	191	209	- 1
Outjo	-	160	15	8	-	-	14	1			198	201	
Grootfontein	-	49	142	-	-	3	_	-	11	10	215	180	+ 3
Total, 1903		2,998	973	453	40	35	19	29	101	34	4,682	4,674	+ 1
Total, 1902 -	-	2,595	1,354	452	57	27	26	19	101	43	4,674		_
Increase or decreas	10	+ 403	- 381	+ 1	- 17	+ 8	- 7	+ 10	_	- 9	+ 8	_	

ADULT MALE WHITE POPULATION by NATIONALITY and RESIDENCE.

The Party Colons	21080	17824		N	ationalit	y.				To	tal.	
District.	Germans.	Boers and Cape Colonists.	English.	Austrians.	Swedes and Norwegians.	Russians.	Dutch.	Without Nationality.	Other Nation- alities.	1903.	1902.	Increase or de crease.
Keetmanshoop	294	254	38	1	3	-	7	-	4	601	494	+ 107
Gibeon	163	-	44	-	-	-	1	15	2	225	182	+ 48
Gobabis	79	3	-	-	-	-	-		-	82	79	+ 5
Windhoek	798	-	63	8	6	1	2	3	1	882	733	+ 149
Swakopmund	361	-	19	28	9	-	4	в	3	430	496	- 66
Karibib	160	6	4	2		2	2	4	2	182	182	-
Omaruru	133	4	4	-	5	1	-	1	-	148	163	- 1
Outjo	142	7		-	-	6	1		-	160	156	+ 4
Grootfontein	43	42	-	-	3	-	-	4	2	94	84	+ 10
Total, 1903	2,173	316	176	39	26	10	17	33	14	2,804	2,569	+ 23
Total, 1902	1,966	287	157	57	20	18	11	24	29	2,569		-
Increase or decrease	+ 207	+ 29	+ 19	- 18	+ 6	- 8	+ 6	+ 9	- 15	+ 235		-

ADULT MALE WHITE POPULATION according to NATIONALITY and PROFESSION.

		730		N	ationalit	y.	ASS.			Tot	al.	
Profession.	Germans.	Boers and Cape Colonists.	English.	Austrians.	Swedes and Norwegians.	Russians.	Dutch.	Without Nationality.	Other Nationalities.	1903.	1902.	Increase or de crease.
Government officials and	939				_	_		_	-	939	858	+ 81
Protectorate troops. Clergy, missionaries, &c	46		1	_		6	1	-	-	54	52	+ 2
Merchants, traders, &c	253	2	16	-	-	1	1	3	1	277	238	+ 39
Settlers and farmers -	834	306	128	1	11	-	8	21	4	813	686	+ 127
Engineers, architects, &c.	14	199_	3	-	-		-	-	1	18	9	+ 9
Mechanics and workmen-	578	10	27	38	15	3	7	9	6	693	719	- 26
Miners		-	-			-	-	-	-	-	-	-
Sailors	6			-	-		-	-	-	6	7	- 1
Doctors	3		1	-		-		-	-	4		+ 4
Total, 1903	2,173	318*	176	39	26	10	17	33	12	2,804	2,569	+ 235
Total, 1902	1,966	287	157	57	20	18	11	24	29	2,569	_	-
Increase or decrease	+ 207	+ 31	+ 19	- 18	+ 6	- 8	+ 6	+ 9	- 17	+ 235		-

^{*} In preceding table two of these are apparently included under "Other Nationalities."

ADULT MALE WHITE POPULATION according to PROFESSION and RESIDENCE.

the state of the first of the state of the s

								Pro	fession.				To	tal.	68.80
Di	District.	t.			Govt. Officials and Protec- torate Troops.	Clergy, Mis- sionaries, &c.	Merchants, Traders, &c.	Settlers and Farmers.	Engineers, Architects, &c.	Mechanics and Workmen.	Sailors.	Doctors.	1903.	1902.	Increase or decr
Keetmanshoop					166	6	45	348	2	31	3	-	601	494	+ 10
Gibeon -					46	4	13	145	2	14	-	1	225	182	+ 4
Gobabis -					33	5	10	19	-	15	-	-	82	79	+
Windhoek	Tellas			-	373	26	109	149	5	219	-	1	882	733	+ 14
Swakopmund				100	72	-	51	6	7	289	3	2	430	496	- 6
Karibib -					23	2	20	35	-	102	-	-	182	182	-
Omaruru -					93	3	14	32	-	6		-	148	163	- 1
Outjo -					109	7	13	20	-	11	-	-	160	156	+
Grootfontein					24	1	2	59	2	6	-	-	94	84	+ 1
	Tota	ıl			939	54	277	813	18	693	6	4	2,804	2,569	+ 23

LIST OF FIRMS and COMPANIES in SOUTH-WEST AFRICA on 1st January 1901.

(Taken from German Official Annual Report, 1900-01.)

		Sta	ff.		Sta	aff.	THE REPORT OF THE PARTY.
Name of Firm or Business.	Headquarters.	White.	Coloured.	Branches.	White.	Coloured.	Remarks.
1. South African Terri- tories, Limited.	Warmbad -	4	3				Land, mine, &c., com- pany, and also com- mercial.
2. Le Riche & Co	,,	-	1			-	Commercial.
3. J. Hite	99	-	_		-	-	,,,
4. H. W. Burmester -	Keetmanshoop	2	2	Bethanien -	1	1	,,,
5. G. A. M. Angelbeck	,,	2	2	Lüderitz Bay	2	1	"
				Bethanien -	1	1	"
				Gibeon -	1	1	,,,
6. Seidel and Busch -	,,	1	2	Lüderitz Bay	1	1	,,
7. T. D. Jearey	,,	3	1		-	-	33
8. F.W.Krabbenhöft -	Gibeon -	1	1	-	-	-	"
9. F. Kriess	,, -	2	1	-	-		99

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eadquarters. arienthal -	White.	Coloured	Branches		White.	Coloured.	Remarks. Commercial and farm
elwater-Naus	2	2					A STREET STREET STREET STREET STREET
elwater-Naus	1	2			STATE OF THE STATE		A STREET THE RESERVE THE STREET STREET
	1	0		- 1	5131 FL 1311		produce.
		3			-	-	Commercial
rootiontein -	1	1			-	-	23
obabis -	4	3			-	-	"
.,	2	2	Aminuis	7	1	1	Clampings buildors
Vindhoek -	1	8			-		Carriage builders. Commercial.
,,	2	1				TO THE	Innkeepers and bakery
,,	2	4					Butchers.
,,	-	2	E Bland of the latest of the l				Commercial, farm pro
,,	6	0		337			duce, ostrich farmer
1 landra		15	Waterhero	-	1	2	Commercial.
	learn rather			-	1	5	Commercial, hotel, an
vindhoek -	0	00					farm produce.
			Karris	100	2	4	Commercial, and fari
	0	9	Windhoek	-	3	5	Commercial.
wakopmuna	2	4		-	2	4	,,
)] V	indhoek -	babis - 2 indhoek - 1 ,,, - 2 ,,, - 2 ,,, - 6 kahandya - 4 indhoek - 6	babis - 4 3 2 2 indhoek - 1 8 1	babis - 4 3 2 Aminuis indhoek - 1 8	babis - 4 3 2 Aminuis - 2 1 8 2 1 2 4 2 7 7 7 7 7 7 6 6 6 2 Windhoek - Karris - 2 Windhoek - 2 2 Windhoek - 2 2 Windhoek - 2 2 Windhoek - 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	babis - 4 3 2 Aminuis - 1	babis - 4 3 2 Aminuis - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

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1	THE RELIES IN THE PARTY.	Windhool	0		Prophonism			
	23. D. Boysen	Windhoek -	2	-				Restaurant.
	24. M. Schurz	"	1	15	Farm Hoffnung	9	31	Emigration agents and
31258	25. Siedelungs - Gesell- schaft für Süd- west-Afrika.	,,,	4	15	rarm frommung		01	farm produce.
	26. S.W. Africa Co., Limited.	,,	1	3			-	Land and mining.
	27. "Windhoeker An- zeiger."	,,	3	5		-	-	Printers.
	28. J. Sander	- Igonosp -	-	1	-	-	-	Commercial.
	29. K. Wendelmuth -	,,	-	2		-	-	Innkeeper.
	30. Liebenstein and Pollzien.	,,	1	8		-		Commercial and butchers.
	31. v. Brockdorff and Schuster.	Hohewarte -	3	10		-	-	Commercial and farm produce.
	32. W. Abraham -	Hatsamas -	1	8			-	Commercial and farm produce.
	33. Kapps and Ullrich-	Farm Zukunft	-	5		-	-	Commercial and farm produce.
	34. M. Pilet	Frauenstein -	2	10	-	-		Commercial and farm produce.
	35. John Ludwig -	Kl. Windhoek	1	6	-		-	Innkeeper and horti- culturist.
	36. H. Stoetzer	,,	1	2				Innkeeper and horti- culturist.
	37. R. Stoss		_	3		-	-	Horticulturist.
H	38. Bönsch	,,, -	-	3	-	-	-	,,,

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		St.	aff.		S	taff.	
Name of Firm or Business.	Headquarters.	White.	Coloured.	Branches.	White.	Coloured.	Remarks
39. H. Denker & Co	Okahandya -		4			-	Commercial and inn- keeper.
40. A. Diekmann -	,,		3		-	-	Commercial and inn-
41. H. Röhlig	Gross-Barmen	-	2				Commercial and inn- keeper.
42. Weilbächer and Ka-	Okahandya -	1	3		-		Carriage builders.
d3. C. Becker	Rehoboth -	-	3			-	Commercial.
44. Wecke and Voigts -	Swakopmund	3	5			-	***
45. Rascher and Thie- lecke.	,,	6	4		-	-	
46. Max Zimmermann	,,	4	6		-	_	Builders.
& Co. 47. Damara und Nama-		14	51	Rehoboth -	4	9	Commercial.
qua Handelsge- sellschaft m.b.H.				Outjo - Grootfontein - Tsumeb -	2 1 1	2 8 3	,,

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STANKANINA TAKAN	CORPORATION IN						Innkeeper und com-
48. Deutsche Kolonial- gesellschaft für	,,	43	31	Salem -	- 1	1	Commercial and horti- culture.
Südwest-Afrika.				Lüderitz Bay	v 5	2	Commercial.
Suuwest-Millaa.				Spitzkopjes		5	Commercial and farm produce.
				Heusis	- 1	5	Farm produce.
49. Swakopmunder Buchhandlung		3	1			-	Booksellers.
m.b.H.							[produce.
50. Mertens and Sichel	,,	3	6	Rehoboth	- 3	7	Commercial and farm
51. Erhardt and Schultz		3	5	Omaruru	- 1	1	Commercial.
52. v. Tippelskirch & Co.	>>	3	4			-	THE RESERVE TO STATE OF THE PARTY OF THE PAR
53. P. Funk	,,	2	2			-	Innkeeper.
54. C. Hagemeister -		3	2			-	Hotel.
55. Damaraland Guano Co.	Cape Cross -	21	45			-	Guano produce and sea fishery.
56. E. Hälbich	Otjimbingue -	8	6	Karibib	- 8	7	Commercial and carriag builders.
57. W. Redecker -		1	1		- 4	3	Commercial and carriag
or. IT. Iteliconol				,,,			builders.
58. Rosemann and Kronewitter.	,,	1	1	,,,	- 3	1	Commercial and inn- keeper.
				The same of the sa	- 6	10	Builders.
				Omaruru	- 8	1	Commercial and inn keeper.
59. O. Glöditzsch -	,,	4	4		-1019	_	Carriage builder.
60. J. Siepen		1	1		-		Butcher.

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		Sta	aff.		Sta	aff.	Carrier builder
Name of Firm or Business.	Headquarters.	White.	Coloured.	Branches.	White.	Coloured.	Remarks.
61. J. Dannert	Otjimbingue -	1	1				Commercial and inn keeper.
62. Rubien & Co	Karibib -	3	1		-	_	Commercial and inn-
63. G. Ahrens & Co	,,	3	1		_		keeper. Commercial.
64. O. Münch	,,	1	1		-	-	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,
65. H. Kahl	Thing -	1	1				Innkeeper. [mercial. Innkeeper and com-
66. N. Seitz 67. Joost	Etiro -	1	1	In Horizonta			Innkeeper and com- Innkeeper and com- mercial.
68. A. Talaska	Fahlwater -	1	1			-	Innkeeper and com- mercial.
69. R. A. Schröder -	Uitdraai -	1	1		-	-	Innkeeper and com- mercial.
70. H. Lange	Kl. Barmen -	1	1	Findential Lines		_	Innkeeper and com- mercial.
71. Niessen	Tsaobis -	1	1	HART GIVE	-	-	Innkeeper and com-
72. Denker	Dorst River -	1	1		-		Innkeeper and com- mercial.

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		2	1	Omaruru -	1	1	Innkeeper and com- mercial. Innkeeper and com- mercial.
,,,	•	2	1		-	-	
,,		1	-				A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
,,			The second second		-	-	Innkeeper and com-
,,	-	1	1				Bakery.
ohn		2	3				Carriage builders.
	-	3	3				Carriage builders.
- ,,	-	1	1		-	_	Commercial.
om- Okombahe	-	2	-				
- ,,	-	1	1		_	_	ANTO DANI. GIORE THERESE
	-	1	3	Palafontein -	1	1	Haker sand abnikeeper:
	-	1	3	Omarasa -	1	1	Pedice » France Balling
THE RESERVE OF THE PERSON OF T	-		2	Billian - Francis	1		Building and Turkoeper.
	-	1	2	36600			Butolies and makesper.
- Utjikango	-		2				Commercial and farm produce.
- Franzfontei	in -	-	2		-	-	Commercial.
- ""	-	-	2	-	-	-	,,,
0	-		2		-		Bakery and café.
	18	35		Branches			Development of mines at Otavi and pro- specting a railway.
	om- Okombahe Outjo - ssen eit- Otjikango Franzfonte	om- Okombahe - Outjo ssen eit- ,, Otjikango - Coutjo Otjikango - Coutjo Outjo Outjo Outjo Outjo	enz	enz	enz	enz	enz

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		St	aff.		Sta	eff.		
Name of Firm or Business.	Headquarters.	White.	Coloured.	Branches.	White.		Remarks	
92. Matzkuhn 93. Köstens 94. C. Geiler 95. Otto and Schuster - 96. W. Maertins 97. G. Haug 98. Gebrüder Bause - 99. M. Küstner 100. J. Bachmann - 101. A. Bachmann - 102. H. Heinemann - 103. Woermann Agentur 104. C. Adler 105. R. Jauch 106. J. Leuffgen -	Jakalswater - Swakopmund ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,	2 2 2 2 3 4 2 3 4 2 5	1 2 2 1 2 1 1 1 1 1 2 74 1 1 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	Nonidas - Jakalswater -		- 22 2	Commercial. Butcher and innkeeper Butcher and innkeeper Locksmith and agent. Baker and innkeeper. Watch or clock maker Painter, &c. Builder. Commercial. Innkeeper. ,, Landing agents. Cabinet maker. Brewery. Hotel.	
07. Becker	,,,	3	2				Laundry. Innkeeper.	

APPENDIX IV.

TABLE OF ROUTES (CALCULATED FOR OX WAGONS).

(This Table is taken from "Nama and Damaraland" by H. von François, published in 1895.)

(Most of the larger places will be found on the map, but not all the smaller ones.)

German spelling has been generally adhered to. Ausspannplatz=Outspanning Place.

Wegeschnittpunkt=Cross Roads.

From	То	Hours.	Remarks.*
Sandfontein Dupas Mt Husab (Ausspannplatz) Husab (Ausspannplatz)	From Walfisch Bay to Otto Sandfontein	JIMBINGUE. 1 8 4 ½ 1 ½ 1 ½ 4 ½ 2 ½ 2 ½ 2 ½ 2 ½ 4 ½ 2 ½ 4 ½ 2 ½ 4 ½ 2 ½ 4 ½ 4	Brackish water. Water sometimes in rainy season. No water. Water all the year. No water. Water sometimes in rainy season (three-quarters of an hour from Ausspannplatz at Tsoakhaub, water all the year). Water all the year. ""

^{*} The Remarks apply to the place of arrival.

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I	from				To	PA D) and	Hours.	Remarks.
				From	m Walfisch Ba	Y TO	Отлі	MBIN	GUE—conti	nued.
Salzwasser Tsaobis Plattklip -	-	-	-	-	Tsaobis Plattklipp - Otjimbingue -				9½ 3½ 5	Water all the year. Sometimes water in rainy season Water all the year.
			F	rom	WALFISCH BAY	viâ I	ROOIBA	NK	TO KLEIN-T	'INKAS.
Gross-Ubib					Ururas - Tsabibib - Gungokhoab Gross-Ubib - Hotsas - Klein-Tinkas				2½ 6 6¼ 4¼ 3¾ 3¾	Brackish water. Water all the year. "" Water very salt (unpalatable). Water all the year. Pool water in rainy season. Water all the year.
Walfisch Bay					Walfisch Bay					Water all the year.

				From Walfisch Bay to Nonidas.	
Walfisch Bay Sandfontein		•		Sandfontein 1 Nonidas 12	Brackish water. Water all the year.
				From Walfisch Bay to Goamikamtes.	Alleges, pulse-demandings of my promi-
Walfisch Bay Sandfontein				Sandfontein 1 Goamikamtes (Wasserstelle) - 13	Water brackish. Water all the year.
				From Walfisch Bay to Haigamkhab.	
Walfisch Bay Sandfontein				Sandfontein 1 Haigamkhab (Wasserstelle) - 13	Water all the year.
				From Walfisch Bay to Gorogos.	
Walfisch Bay Wortel - Worteldam Dorupdam Frederiksdam				Wortel - - - $1\frac{1}{2}$ Worteldam - - - $1\frac{1}{2}$ Dorupdam - - - $1\frac{1}{2}$ Frederiksdam - - - 2 Gorogos - - - 3	Water all the year. """ """ """ """
			7300	From ROOIBANK to HUSAB.	PARTIES NIT THE AGENTS
Rooibank -	a out			Husab (Ausspannplatz) - 15½	Water all the year.

Fron	n			To	Hours.	Remarks.
Troomstre -				- Husspannpists)		
	Fro	m Sw	AKO	PMUND to OTJIMBINGUE through	h the SWA	KOP VALLEY.
Swakopmund -				Nonidas	2	Water all the year.
Nonidas				Goamikamtes	41/2	,, ,,
Goamikamtes -				Haigamkhab	3	,, ,,
				Husab	4	,,
Haigamkhab -				Gawieb	6	22
Husab				Nabas	23	,,,
Gawieb				Ried	2	,,
Nabas				Salem	23	,,, ,,
Ried			-	Diepdal	210	25
Salem					21	
Diepdal	-			Horebis	5	
Horebis	-		-	Büllsbout	93	
Büllsbout			-	Pot	3	
Pot	-		-	Anawood	9	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Anawood	-	-	-	Ubakus	11	"
Ubakus	-	-	-	Otjimbingue	*4	"
				TT A Mairie to to IX	Ter treat Marie	THE (TRAOBIS).
	From	AUSSI	PANN	PLATZ HUSAB viâ TINKAS to W	ILHELMSEL	1 TAT - ton oll the moon
Husab (Ausspani	1) -			Klein-Tinkas	10	Water all the year.
Klein-Tinkas -		-	-	Gross-Tinkas	12	TIT to the serventone of an hou
Gross-Tinkas -		-		Onanis	6	Water three-quarters of an hou
						northwards.
Onanis	-			Wittwater	81/2	Water only in rainy season.
Wittwater -			-	Wilhelmsfeste (Tsaobis) -	41/2	Water all the year.

Kenintke

From SALE	m to W	ILHELMSFESTE (TSAOBIS) (direct, way), so-called "Middleway."
Salem Salzwasser	F	Salzwasser 2\frac{2}{3} Water all the year. Tsaobis 9\frac{1}{4} " " Tom Wilhelmsfeste to Pot and Anawood.
Wilhelmsfeste (Tsaobis) Wilhelmsfeste (Tsaobis)		Pot $3\frac{1}{2}$ Water all the year. Anawood $4\frac{1}{4}$ " "
Otjimbingue Klein-Uitdraai Gross-Uitdraai Hinterst Banken - Kwaipüts Snijrivier (Sny River) Klein-Barmen Gross-Barmen Tabaksteinplatz -		Klein-Uitdraai

^{*} Pumps were erected, but have now been removed.

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C.		
D.		
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From			То				Hours.	Remarks.
		F	rom OTJIMBINGUE	to	WIND	HOEK	-continu	ed.
			THE REPORT OF THE					
Oshorongo	-	-	Otjiseva -	-	-	-	$3\frac{1}{2}$	Water all the year.
Otjiseva		-	Okapuka -	7.	-	-	$2\frac{1}{2}$	"
Okapuka	-	-	Brakwater -	-	-	-	13/4	, ,, ,,
Brakwater	-	-	Windhoek -	-	-	-	$4\frac{1}{2}$	Hot spring.
			Chrose dillipant			-		
or mapping and			From Otjime	BINGI	JE to	OMA	RURU.	
Otjimbingue			Okongava -				$5\frac{1}{2}$	Water all the year.
Okongava		-	Karabib -	-		-	$6\frac{3}{4}$	39 39
Karabib	-	-	Etiro	-		-	3))
Etiro	-	-	Osombembambe	-	-		4	,,,
Osombembambe -	-	-	Omaruru -	-			$4\frac{1}{2}$	"
	Fre	om (OTJIMBINGUE to \	VINI	OHOEI	z (vic	a Copper	MINE).
Otjimbingue		-	Dawidzaub -			-	3	Pool water in rainy season le
STREET, STREET			T STRONG			1		minutes northwards.
Dawidzaub	-	-	Tsawichabfluss Oakaris -	-	-	-	$4\frac{3}{4}$	Water, rainy season only.
Tsawichabfluss	-	-	Oakaris -	-	-	-	3	22

				,						
Oakaris -	derin)		_	-	Ausis			-	1	Salt water.
Ausis -					Wasserstelle Ka			-	3	Water in rainy season only.
Wasserstelle 1					Hauchas -			-	3	99
Hauchas -					Dikomasdagas			-	21	
Dikomasdagas					Ganagas -			-	$2\frac{1}{2}$	Water in rainy season only.
Ganagas -					Gamhuis -				10 min.	Water in hills 400 metres north-
a .					0-1:					wards.
	-			1	Guachinaus -			-	4	Water only in rainy season.
Guachinaus			-	-	Abokheibis -				4	Water in cliffs all the year, 100 metres southwards.
Abokheibis	P	-	-	-	Heikeibdikus	-	-	-	4	Water only in rainy season.
Heikeibikus	-	-	-	-	Wasserstelle (so	uth ro	oute)	-	$2\frac{1}{4}$	
Wasserstelle (south	route)	-	Klein-Heussis		-	-	$2\frac{1}{4}$	Water all the year.
Klein-Heussis	-	-			Gross-Heussis				25 min.	"
Gross-Heussis	-	-		-	~ .	-			$3\frac{1}{2}$,, ,,
Gananis -	-	-	-		Umuasmus -	-	-	-	$2\frac{1}{2}$	Water in rainy season.
Umuasmus	-		-	-	Matchless Mine	-		-	$3\frac{3}{4}$	
Matchless Mir	ie .	-	-	-	Garkhasukop			-	15 min.	Water all the year.
Garkhasukop	-		-		Karu	STATE OF	OF GREET	-	1	Water in rainy season.
Karu -	-	-	-	-	Ongeama -	90 WH	MIGH	-	6	Water all the year.
Ongeama -				-	Windhoek -		-	-	$3\frac{1}{2}$	Hot spring.
					From OMA	RURU	to OI	COMI	BAHE.	
Omaruru -	*000			-	Otyombaue -				53	Water all the year.
Otyombaue			-	-	Okondeka -		-	-	23	,, ,,

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of the Parket of the second

From	То	Hours.	Remarks.
Okondeka Okarundu (native village) - Okarundu (watering-place) Ehauri Osombembambe Ongoati	From OMARURU to OKAMB - Etemba - Okarundu (native village) - Okarundu (watering-place) - Eharui Okombahe - Osombembambe - Ongoati - Kaibib	AHE—continued - 3/4 3/4 3/4 2 3/4 3	
Kaibib	Guabib	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Water in rainy season. Water all the year. Water in rainy season. Water all the year. """ """ """ """ """ """ """

From OMARURU to WATERBERG vid OMBURO.

1					CATOCATION TO THE ELECTRON OF A CONTRACT OF THE CONTRACT OF TH		3300			
	Omaruru Okosongeama - Klein-()ndanjanje			-	Okosongeama - Klein-Ondanjanje - Gross-Ondanjanje -			$3\frac{3}{4}$ 17 min. $\frac{1}{2}$	Water all the	e year.
1	Gross-Ondanjanje	-	-	-1	Otyitundudu	STAG	SYLE	23 min.	"	"
1	Otvitundudu -	-	-		Omburo	-	-	1 2	. 33	"
1	Omburo	-	-		Ouserameva	-		0	"	"
1	Ouserameva -	-	-		Omingondo	-		1	"	,,,
1	Omingondo -	-	-		Okosombuka			51	"	"
1	Okosombuka -	-	-		Okosonguto			91	39	"
1	Okosongotu -	-	-		Echuamina -			32	Water 800 n	netres northward.
1	Echuamina -	-	-	-	Ombuyakakuia -	-		- 1	Water all th	
	Ombuyakakuia	-	-	-	Omunanena	-	-	14 20 min	Water an in	c y car.
	Omunanena -	-	-	508	Omusema	THE MAN	N) E	39 min.	ore?	
	Omusema -	-	-	-	Gross-Ombujominye			$\frac{2\frac{1}{2}}{22 \text{ min.}}$	"	
	Gross-Ombujominye	e	-	-	Klein-Ombujominye	-	-	39 min.	Water.	
	Klein-Ombujominye	5-111	(Fe) -	-	Otjideidei			99 mm.	Water.	
	Otjideidei -		-	-	Klein-Omveroumue	TO THE		0	Water all th	e veer
	Klein-Omveroumue	-	-	-	Waterberg -	4 (3)	-	2	Water all th	o jour.

From OKOMBAHE to AMEIB.

Okombahe Tumeb Perlhuhnfontein -		Tumeb Perlhuhnfontein Ameib	-	-	-	$8\frac{1}{2}$ 4 $3\frac{3}{4}$	Water. Water all the year.
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	From				То				Hours.	Remarks.
			F	rom	OTJIKANGO (GRO	oss-I	BARME	(N)	to OKAHAN	DYA.
Otjikango (Gr Osona (First : Osona (Secon	native	villa	ge)	-	Osona (First nativ Osona (Second na Okahandya -	ve vi	llage) villag	e)	3 ³ / ₄ 1 ¹ / ₄ 1 ¹ / ₄	Water all the year.
]	From	OTJIKANGO (GRO	oss-I	BARME	(N)	to KAMANII	NGONGOA.
Otjikango Alt-Kamarur Neu-Kamarur Kotjisorue Kaunjoseru					Alt-Kamaruru Neu-Kamaruru Kotjisorue - Kaunjoseru - Kamaningongoa From Okahandya		OTY	OSAS	3\frac{1}{4} 1 2 1\frac{1}{2} U to SEEIS	Water all the year. """ """ """ """
Okahandya Otyosasu - Onganyira Otyosoniati					Otyosasu - Onganyira - Otyosoniati - Okaparuaha -				8 3 3 4 4 1 2 3 4 3 4	Water all the year. Water in rainy season. Water all the year.

Okaparuaha -		-	Otyituesu			5	Water all the year.
Otyituesu -			Ehemalige Werft 1	Ianas	ses	1	Water in rainy season.
Ehemalige Werft Ma	naggag	von	Otyipaue			2	Water all the year.
Hoacha nas	Паросо	VOII	Otylpaue -			0	water an the year.
Otyipaue			Omunyereti		-	10	
Omunyereti		-	Onkangondo	-	-	41	Water (pools) all the year.
Onkangondo			Seeis		-	$2\frac{3}{4}$	Water all the year.
			From OKAHANDYA	to V	VATER	RBERG.	
					1		
Okahandya		-	Okangongo		-	$1\frac{3}{4}$	Water all the year.
Okangongo			Ombiakamsofluss -		-	13/4	Water at Omuserakarumba on hour lower.
Ombiakambofluss -		-	Vley	-	-	23/4	Water in rainy season.
			Wegegabelung -	-	-	1	No water.
Vley		200	11 Off Chicago Craria				
Vley Wegegabelung			Otjideidei		-	1/4	Water.
Vley					-	9	
Vley Wegegabelung			Otjideidei Gombambi		-	1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	Water. Water all the year.
Vley		-	Otjideidei Gombambi Ossiamongombe -			1 1 2 3 4 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Water all the year.
Vley Wegegabelung - Otjideidei - Gombambi Ossiamongombe			Otjideidei Gombambi			9 1½ 2¾ 2½ 2½	Water all the year.
Vley Wegegabelung - Otjideidei - Gombambi Ossiamongombe Okasongeama -			Otjideidei Gombambi Ossiamongombe - Okasongeama Okamaye			9 1 1 2 3 4 2 1 2 1 2 1 5	Water all the year. "" "" "" "" ""
Vley Wegegabelung - Otjideidei - Gombambi Ossiamongombe Okasongeama -			Otjideidei Gombambi Ossiamongombe - Okasongeama -			9 1 2 3 4 1 2 1 4 2 1 2 1 4 2 3 4 1 2	Water all the year. """ """ """ """ """
Vley Wegegabelung - Otjideidei - Gombambi - Ossiamongombe Okasongeama - Okamaye -			Otjideidei Gombambi Ossiamongombe - Okasongeama - Okamaye Okandyose			9 1 2 3 4 1 2 3 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4	Water all the year. "" "" "" "" ""

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	From					To				Hours.	Remarks.
				F	rom OKAHAN	DYA	to W	ATE	RBERG	-continu	ed.
Erindiorombi	inga	_			Ehangero			-	-	$2\frac{1}{4}$	Water all the year.
Ehangero -	-		-	-	Okotyitund	0 -		-	-	$1\frac{1}{2}$,,
Okotyitundo	-	-			Otyikurume	-	-	-	-	$1\frac{1}{2}$	"
Otyikurume	-		-	-	Osire -	-	-	-	-	6	"
Osire -	H LE		-	-	Omburomot			-		$2\frac{1}{4}$,,
Omburomotu	mbo	-		-	Omurambak	camal	keri	-	-	11/2	Water in rainy season.
Omurambaka	make	ri -			Waterberg					2	Cold springs.
					From O	KAHA	NDY	A to	WIND	HOEK.	
Okahandya					Osona -				-	11/4	Water all the year.
Osona -	-	-	-	-	Otjihavera	-	-	-	-	5	,,
Otjihavera				-	Okapuka	-	-	-	-	$3\frac{1}{2}$,,
Okapuka -		-	-	-	Brakwater	-	-	-	-	13/4	,,,
Brakwater		-			Uiams -			-		$2\frac{1}{2}$	Water in hills one kilometr westwards.
					Windhoek	-				2	THE PERSON NAMED AND POST OF THE PARTY OF TH

		1	From WINDHOEK	to]	Rенов	OTH 1	viâ NAUAS	
Windhoek Auas Gebirge Aris Kransnues Aub- Nauas -			Auas-Gebirge Aris Kransnues - Aub Nauas Rehoboth -				2½ 3½ 4 ½ 2 3¼ 7¾	No water. Water in rainy season. Water all the year.
			From WINDH	OEK	to H	OORN	KRANS.	
Windhoek Ongeama - Karu - Haris - Wasserstelle Guruma nas Naos - Garacheikoas			Ongeama - Karu Haris Wasserstelle - Guruma nas - Naos Garacheikoas Hoornkrans -				3½ 6 2¼ 4 4 7	Water all the year. Water in rainy season. Water in rainy season. Water in rainy season. Water all the year. Water in open pools in rainy season only. Water all the year.
			From WINDHOER	to	NAO8.	ANABI	s viâ AAI	
Windhoek Auas Berge	-		Auas Berge - Aris -				2½ 3½	No water. Water in rainy season.

F	rom				To				Hours.	Remarks.
			F	rom	WINDHOEK to N	AOSA	NABIS	vid	AAIS-cor	itinued.
A					Gubagub -		-	-	$6\frac{1}{2}$	Water all the year.
Aris -					Kunamis -			-	2	,, ,,
Gubagub -					Komanarugas	-	-	-	2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Kunamis -					Hatsamas -		-	-	4	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Komanarugas	-				Kowas -			-	11	Theres, is ober, book to the
Hatsamas -	-				Khougams -			-	9	33
Kowas -	-			-	Akhenib -	12.00		-	2	The state of the s
Khougams	-	-							41/4	Water in rainy season.
Akhenib -	-			-	Pfanne - Khutsikhus -			-	11	The state of the s
Pfanne -	-	-							131	Water all the year.
Khutsikhus	-			-	Aais				$3\frac{1}{2}$,,
Aais -	-	-	-	-	Hoaseb -				91	
Hoaseb -	-	-	-	-	Naosanabis -				4	,,
					From AR	is to	GUR	UMA	NAS.	
					Nuaub				5	Water all the year.
Aris -	-			-	Goas				21/2	,,,
Nuaub -	-		-	-	Gamanhorebis				4	Water in rainy season.
Goas -	-			-					4	Water all the year.
Gamanhorebis	-		-		Gurumanas					Marine L. Despite Spiles DD
					From KR.	ANSNU	JES to	No	AUB.	
Kransnues					Nuaub	-		-	2	Water all the year.

					From	AUB	to Ni	JAUB.		
Aub				-	Nuaub -				234	Water all the year.
]	FROM	AUB to REHOBO	отн ((so-ca	lled "	Gravel-p	ath ").
				1						
Aub -	-	-		-	Vlev	-	-	-	$2\frac{3}{4}$	Water in rainy season.
Vley -	-	-	-	-	Kudduberge -	(Part)	-	-	5	No water.
Kudduberge	-				T 1 1 1	-		-	3	Warm spring.
					From KR.	ANSNI	UES t	o SEE	CIS.	
Kransnues				-	Gubagub -			-	41/2	Water all the year, 500 metres
Manshues					C. L. C. C.					southward.
Gubagub -		-	-	-	Mantjesrivier	-	-	-	1	Water all the year.
Mantjesrivier					Otjanaiho -	254,040	MAT D		$7\frac{1}{2}$,,,
Otjanaiho	-	-	-		Seeis -	-	-		7	"
					From Reнoв	OTHER	to H	OPNE	TDANG	
					From REHOB	OIH	10 110	JORNI	LILAND.	
Rehoboth				-	Zwartmodder				13/4	Water in rainy season.
Zwartmodder					Neuras	-		-	23/4	Water all the year.
Neuras -					Kamasis -				13	77
Kamasis -		_	-		Kwartel -			-	4	Water in rainy season.
Kwartel -	-	-	-		Hoornkrans -			-	71/2	Water all the year.

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	From					To				Hours.	Remarks.
					From F	ЕНО	вотв	to G	URUM	LANAS.	
									+		
Rehoboth Duruous -	-	-	-	-	Duruous Gurumanas					6 ¹ / ₂ 4 ¹ / ₂	Water all the year.
					Fro	m R	PHAD	OTH t	TTer	TO OT	
					T. I.O.	11	LITUB	OIH U		LD.	
Rehoboth -		-			Usib -			-	-	4	Water all the year.
			Fro	m I	сеновотн to	KAI	RING	EIS (OI	n the	way to (GIBEON).
Rehoboth -	-	-		-	Zwartmodd	er (N	ugoa	is)	-	$1\frac{3}{4}$	Water in rainy season.
Zwartmodder	-	-	-	-	Awasab			-	-	41	Water.
Awasab -		-	-	-	Tsumis -	-	-	-	-	6	,,
rsumis -	-	-	-	-	Haiguoao	-		-	-	63	***
Haiguoao -	-	-	-		Kupmaham			-	-	4	"
Kupmahams	-	-	-	-	Gaus -	-	-	-	-	$6\frac{1}{2}$,,
Gaus -	-	-	-	-	Kup -	-	-	-		5	MANAGE THE SEC STATE
Kup	-	-	-	-	Kuis -	-	-	-	-	13	,,,

Kuis Packriemen Kainhokas Gaitsabis					Packriemen (Geitkaub)- $2\frac{1}{3}$ Water.Kainhokas $12\frac{1}{3}$ "Gaitsabis $2\frac{1}{2}$ "Karingeis $1\frac{3}{4}$ "
					From Kupmahams to Slip.
Kupmahams					Slip 2
					From Naosanabis to Hoakhanas.
Naosanabis Koikams - Omnab -					Koikams $\frac{16\frac{1}{2}}{0 \text{mnab}}$ $\frac{5\frac{1}{2}}{10}$ Water all the year. Hoakhanas 10 ,, ,
					From Hoakhanas to Gokhas.
Hoakhanas				-	Gumkanas 2½
Gumkanas		-	-	-	Anis 2 ³ Water all the year.
Anis -	-	-	**	-	Kamkas - $-\frac{6\frac{3}{4}}{}$
Kamkas -	-	-	-	-	Stampried 5 Water all the year.
Stampried	13000	-	-	-	Witkrans 4 ,, ,, ,,,

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	Fron	1			- MATERIAL PROPERTY.	To				Hours.	R	emarks.
FERR					From HOAR	HAN	AS to	Goi	CHAS-	-continued		
Vitkrans -					Nabas (Nab	ahar	(err			41	Water all the	VAGE
abas -				_	Witpüts	-	-	-		41		J Ciel.
Vitpüts -	-			-	Gokhas	ELdy	RHAN	RA	(2)	41	,,	,,
											,,,	,,
					Fron	G	OKHAS	to	GIRE	OW		
					Beakhana	- 01	JARILAN		CILDIN	O.N.		
					Guinab						ALPEGE THE THE	BASE.
okhas -				-	Karaam	-			-	9		
araam -					Witbooivley				-	44		STREET, STREET
Vitbooivley					Goamus	VERY	AVRIE	To	1207	9½ 8½	Water all the	year.
oamus -					Khaus -			-	-		VIT-411 41	
haus -					Gibeon -					101	Water all the	year.
					- Sup				1			
					From	GI	BEON	to E	ERSE	BA.		
					a la				10			
ibeon -				-	Garuams	-	-	-	-	91/4	-	
aruams -	-		-	-	Ganous	-		-	-	6	Water all the	year.
anous -				-	Kuissous			-	-	434	"	,,
uissous -		-			Kirinaris			-	-	23	"	,,
irinaris -			-		Gukoib	•				8	"	,,
ukoib -		1	-	-	Berseba	7 15	SECTE 8111	7	-	23	1)	"

		F	rom B	BER	SEBA to JAKALSWATER	(on	the r	oute to B	ETHANIEN).
Berseba -				-	Kameeldornrivier -			$3\frac{3}{4}$	Water in rainy season.
					Huabekas			4	Water.
Huabekas-		-	-	-	Karakois	-	-	$4\frac{1}{2}$	Water all the year.
Karakois -	-	-		-	Jakalswater	-	-	5	"
					From Kuissous to	NA	AUWI	LOOF.	
Kuissous -				-	Nauchanas	-		51	Water.
Nauchanas				_	Tsarachaibis	-	-	3	,,
Tsarachaibis		-		-	Hudugaos			3	
Hudugaos		_			Tsugaos			$2\frac{3}{4}$	Water all the year.
					Ganams (Kameelbaumi			23	Water.
Ganams (Kan			nond)	_	Heinib (Blüchrivier)			1 =	***
Heinib (Blüch			_		Garis (Quekfontein)			31	Water all the year.
Garis (Quekfo					Garikub (Hartloup)			$2\frac{3}{4}$	Water.
Garikub (Har					Brekhorn			43/4	,,
Brekhorn	- Loup)				Karikhab	_		2	,,
Karikhab -				-	Nugamib (Zwartwater)	-		23	,,
Nugamib -					Davibgaos			13	
Davibgaos		_			Kauchaeibib	_		23	,,
Kauchaeibib					Auchonab	-		11	"
Auchonab				-	Auchas	-		$2\frac{1}{2}$,,
Auchas -		_		-	Kauchorib	4	TO THE	13/4	
Kauchorib		-	-	-	Nomtsas	-	15.	41	Water all the year.
Nomtsas -		2 3			Dausnabas	-		3	Water.

Fron	1		To	Hours.	Remarks.
			From Kuissous to Naauwklo	OOFcontinue	ed.
Dausnabas -		-	- Nugamih	- 1	Water.
Nugamib	-	-	- Ganuchas	- 1	,,
Ganuchas		-	- Paviankrantz	$-9\frac{1}{2}$	Water all the year.
Paviankrantz -		-	- Aminuus (Straussenhaar)	$-1\frac{3}{4}$	Water.
Aminuus (Strauss	enhaar) -	- Nuhaub	$-2\frac{1}{4}$,,,
Nuhaub			- Nauchas	- 21	***
Nauchas	-		- Tsudab	- 23/4	
Tsudab		-		1	Water all the year.
	-		- Korus	- 4	Water.
			Naauwkloof 4 km. eastwards		
			From Korus to Nomaams, in T	TT	
Korus			- Habitus	41/2	Water all the year.
Korus Habitus				41/2	
			- Habitus	41/2	Water all the year.
			- Habitus Tsaukhab Valley, Nomaams	41/2	Water all the year.
Habitus			- Habitus Tsaukhab Valley, Nomaams From Windhoek to	41/2	Water all the year.
Habitus Gross-Windhoek			- Habitus Tsaukhab Valley, Nomaams From Windhoek to - Ajein-Windhoek	41/2	Water all the year.
Gross-Windhoek Klein-Windhoek			- Habitus Tsaukhab Valley, Nomaams From Windhoek to - Kjein-Windhoek Gorekokhanas	41/2	Water all the year.

Table of Distances.

Furnished by Lieut.-Col. Laffan, R.E., 1903.

Measured Distances (with rotameter.)

F	om					То				* Kilo- metres.	Remarks.
Windhoek					Seeis -		-		-	60.5	
Windhoek		-	-	-	Gobabis	_	-	-	-	220	
Gobabis -	-		-	-		-	-	-	-	22	
Guikus -	-	-	-	-	Oas -	-	-	-	-	26	
Oas	-		-	-	Olifantskloof		-	-	-	90	
Olifantskloof	2	-	4		Upper Rietfo	ontei	n-	-	-	90	
Oas -	_	-	1	-	Zachas -	-				13	
Zachas -	-	1- 1-	-	-	Uikhanas	-		-	-	24	
Uikhanas -	-	-			Araroams	-		-	-	28.5	
Araroams -	-	-	-		Nuis -	-		-	-	61.2	
Nuis -	-	-	-	-	Aminuis	John	Boni	002	-	23	
Aminuis -	-	-	-	-	Gubnoms	1	5 B	THE PER	-	22	
Keetmanshoop	-	-	-	-	Warmbad	-	-		-	277.5	
The same of the sa	-	Signa	-	-	Ramansdrift	-	-	-	-	347	
"	-	-	-	-	Davignab (de	e Sc	onde'	's Dan	n)-	238.5	
nia mining	-	-	-	-	Ukamaas	-	-	-	1	303.6	
33	-	-	-	-	Jerusalem	-		-	-	348	
Kubub -	-	-	-	-	Ukamas	-		-	-	72	
Ukamas -	000	-		-	Lüderitz Bay	7	-	-		53	

^{*} An ox-wagon travels on an average about 4½ kilometres an hour.

	From				E L'ALTERATE DE LA COMPANSION DE LA COMP	To				Kilos.		Remarks.	
Keetmanshoop) -				Kubub -					250			
Windhoek			-	_	Kapp and U	Ilrich'	s St	ore		18			
Kapp and Ulr				-	Rust's Farm					20			
Rust's Farm					Seeis -					20			
Seeis -		-	-		Otjihanena				1)-	45			
Otjihanena	-		-		Okiseva (Mi	ssion	Stat	ion)	-				
Okiseva -										15			
Witvlei -										38			
Kalkpfanne					The state of the s					33			
Keetmanshoop										35			
Gabus -					Blau -					18			
Blau -					Tses -					35			
Tses -					Aritetis-					48			
Aritetis -					Gibeon -					48			
Gibeon -					Girichas				1	35			
Girichas -										30			
					Rietmond					12			
Rietmond	-		-		Kalkfontein					30			
Kalkfontein	-				Nunib -		-			40			
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Guigandis		_			Awadab		Nes	P. Tall	THE P	20			
Awadab -	_		_	_	Aminuis	-	Ser.	TOTAL S	Ind.	65	a service of		

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0	-	-	5
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Lower Rietfontein (Gordonia) -	Hasuur	25
Hasuur		55
Kiriis	Aninus	60
Aninus	Koes	22
Koes	Persip	90
Persip	Amata	12
Amata	Kraal on Auob River	40
Kraal on Auob River	Gochas '-	12
Gochas (along Auob River fre-	Naba Harus	45
quent water)		
Naba Harus	Nunib	40
Hasuur	Keetmanshoop	200

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APPENDIX V.

ROAD AND RAILWAY REPORTS.

No.	Road.	Locality.	Authority.
i	Karibib to Otjimbingue-		
2	Otjimbingue to Gross Barmen (Otjikango).	*Eastern portion	Lt.R.S. McClin- tock, R.E.,
3	Gross Barmen to Oka- handya to Windhoek.	Swakop Valley. Karibib-Wind-	1903.
4	Gross Barmen to Wind- hoek (Alternative Routes).	hoek.	
5	Walfisch Bay to Swakop- mund		Do.
6	Karibib to Omaruru -	1	
7	Omaruru to Outspan † 1 nmile north of Otjom-bombe.	North of the	Furnished by
8	Outspan 1 mile north of Otjombombe to Outjo.	Railway from { Karibib into	G.O.C. Cape Colony.
9	Outjo to Okanwejo (Oka- ukwejo).	Ovampoland.	Dated May 1903.
10	Okanwejo to Olukonda -		
11	Do. (Alternative)		
12	Lüderitz Bay to Keetman- shoop.		R.L. Tottenhan (Morning Post 26/1/04).
	Railway Itinerary.		
13	Swakopmund to Wind-hoek.		Lt. R. S. McClin tock, R.E 1903.

^{*} For 1, 2, 3 and 4, see Map of Swakop Valley in pocket.
† Outspan is the local term for halting-place, and is used as such

in these reports.

(1)

KARIBIB to OTJIMBINGUE.

General Compass Direction - - 170°
Distance by Road - - 34½ miles.

No farms or villages are passed, but near the watering place of Okongowa, 17½ miles from Karibib, native herdmen sometimes make temporary settlements.

This is the only road existing between Karibib and Otjimbingue.

The only difficult portion of the road is the steep gradient up to the Pforte Otjimbingue (26 miles from Karibib).

The road is an unmetalled wagon-track, the width of one wagon, made on the natural surface of the ground. It is firm and hard except for a short distance of one mile, during which it runs along the sandy bed of the Okongowa River.

(Note.—An alternative route, by which the Pforte Otjimbingue would be avoided, could be found by following the course of the Okongowa River to its junction with the Swakop and thence approaching Otjimbingue from the west. Total distance Karibib to Otjimbingue by this route 41 miles.)

The only permanent watering-place on this route is at Okongowa, but 7 miles north of Otjimbingue there is a large rock 200 yards west of the road, in the hollows on which water is found for 6 or 7 months of the year—November to May.

Grazing during the dry weather is scarce, except along the Okongowa River.

Troops could move off the road everywhere except within 9 miles of Otjimbingue, where the thorn-scrub is so thick as to be a serious obstacle to guns or mounted men.

Itinerary.

On leaving Karibib the road runs across the flats in a south-easterly direction, skirting the west end of a broken mass of hills, which rise on the south-east side of the town to a height of 800 feet.

At 4 miles the road crosses a low spur by a nek called the Pforte-Karibib (pass or defile). It then rises gradually across an open slope on to a level scrub-covered plateau, lying between a flat-topped kopje, 600 feet high, on the west, and a rocky ridge on the east, out of which rise two conspicuous conical hills called Sargdonet and Pramberg.

This plateau forms the watershed between the Khan and Swakop Rivers, and wide views are obtained over the Karibib flats to the north-west, west, and southward down the Okongowa valley to the hills near the Pforte-Otjimbingue (pass or defile).

The road so far is excellent, the surface hard and the gradients easy. From this plateau there is a gentle slope down into the valley of the Okongowa, and the view to the east and west is restricted by thorn-scrub and by high land. Okongowa is reached at 171 miles. The main well lies among a clump of trees in the bed of the river, and there is a second one 2 kilometres distant to the east, in the bed of the tributary. There used formerly to be a small detachment of troops here. The well is lined with stone and fitted with a bucket and chain, and there is a stone drinking trough. The water in July, 1903, stood at a depth of 30 feet, and was good in quality and plentiful, but to get it from the wells is a matter of time and labour. Probably some 200 horses could be watered from these wells in the dry weather, but arrangements for pumping would be necessary and also the erection of troughs. Water could undoubtedly be obtained at other places in this river, but the depth appears to be great.

The road follows the course of the river bed, which is 50 yards wide, for a mile through heavy sand, and then crosses a series of low spurs running north-east and

south-west. A tributary of the Okongowa is reached at mile 23, at the place marked Onseramewa on the German maps. This word in Herero means "our water," and, though there is no sign of any native village or watering place near the road, water could probably be found by digging.

The road now rises towards the nek called the "Pforte Otjimbingue," and for 4 mile there is a steep gradient of 1 in 10 (see attached sketch).

At this nek there is a branch road marked "To Ubib," and wide views are obtained towards the north and to the north-west over the Okongowa and Gamikhaub as far as Otjipatera.

From here the road, which is everywhere very good, falls gradually through thick thorn-scrub into the Swakop valley, and the town of Otjimbingue is reached at 34½ miles.

The town of Otjimbingue, which lies on the north bank of the Swakop River, and on both sides of the Omusema River, consists of police barracks, one hotel, three stores, two wagon-makers' shops, a native church and mission station, and a good many native huts. The police barracks are loopholed, and several other buildings are solid enough to be capable of defence against rifle fire, but all are commanded from the north.

The water supply comes from pits in the river bed and from wells fitted with aermotor pumps, and is practically unlimited.

This used to be an important military station, but now there is only a detachment of four men stationed here.

On the north bank of the Swakop the land rises in an even slope from the river, covered thickly with small thorn scrub, while on the south bank there is a narrow stretch of level open ground, beyond which the land rises sharply into bare rocky hills. Just to the north of the town and west of the Omusema River there are three flat-topped hills 40 feet high. There are three main roads leading out of Otjimbingue in addition to the Karibib road. These are:—

- 1. Down the Swakop valley through Pot to Horabis and Diepdal.
- 2. South-west to Tsaobis (30 miles).
- 3. East along the north bank to Uitdraai and Gross Barmen.

There is also a fourth road through Dawitsaub and Heussis to Windhoek. This road is included in the Tables of Routes in Appendix IV., p. 92; but from inquiries it appears that it is a very bad and hilly one, and has not been traversed for a long time. A man lately tried to go by this route from Windhoek to Otjimbingue with a wagon, but found it overgrown with trees and brushwood, and gave up the attempt.

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OTJIMBINGUE TO GROSS BARMEN (OTJIKANGO).

General Compass Direction - - 80°

Distance by Road - - - 46 miles.

The farms passed are:-

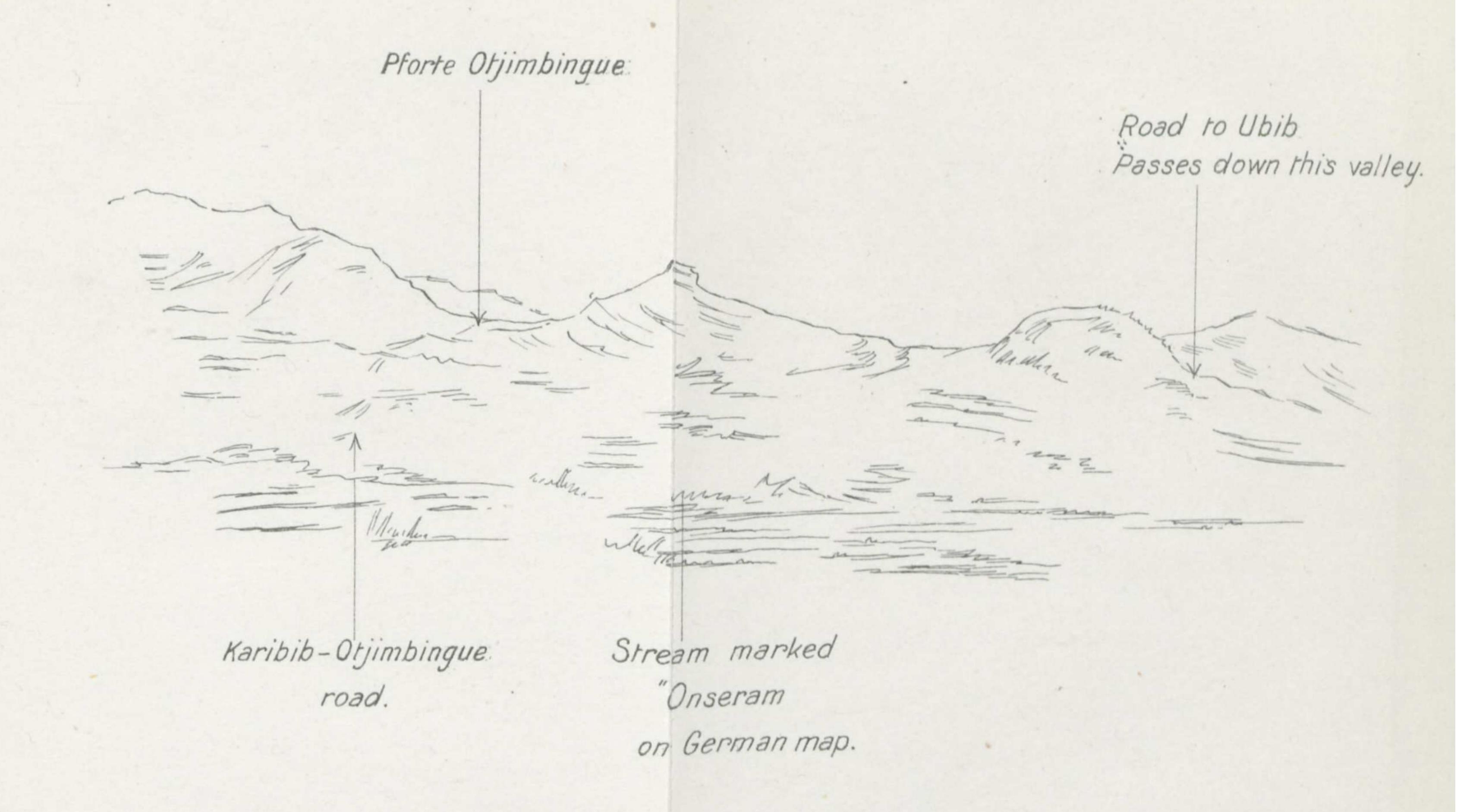
Uitdraai.—7 miles from Otjimbingue; a farm and store belonging to a man named Shroeder, an ex-officer of the German Army, married to a Frenchwoman.

Sny River.—34½ miles. A small store kept by a German named Lange, married to a native woman.

Klein Barmen.—38½ miles. A farm and store belonging to a brother of the owner of Sny River store.

In the bed of the Swakop at 42 miles there is another farm belonging to a German.

This is the only road between Otjimbingue and Gross Barmen. It is said that it would be possible to take a



"PFORTE OTJIMBINGUE" FROM THE NORTH.

wagon up the south bank of the Swakop, but that transport riders never went that way.

Though the direction of this route makes a right angle with the Karibib-Otjimbingue road, intervening mountains forbid a direct route from Karibib to Gross Barmen.

It is possible, however, to go viâ Ongossa or Fahlwater, the latter of which routes makes the distance from Karibib to Barmen 20 miles shorter than by the Ojtimbingue road. The crossing over the Ongossa River,8 miles from Otjimbingue, is very heavy, and a long though not steep slope has to be climbed to reach the plateau to the north of the Lieuwen Bergen.

The road between Klein and Gross Barmen is very bad in places, rocky, and with some short stretches of heavy gradients.

Grazing is everywhere to be found, but in the dry weather it is somewhat scanty, especially on the high-lying parts of the road. The scrub is nowhere so dense as to prevent mounted troops moving off the road, but some scrub would have to be cleared in places to allow guns to pass.

Water is found all the year at:-

Uitdraai						7	miles.
Kwaiputs .			-		-	26	**
Sny River			20-19			341	**
Klein Barme	n		72	00 0000		381	29
In the Swake	op :	River	-			42	99

Major von François also shows water as being found "occasionally in rainy season" at a place he calls "Hinterst Banken," which must be on the plateau to the north of Liewen Bergen, and is probably a depression in a rock in which rainwater lodges. (See p. 91, Appendix IV.)

Near Uitdraai and Klein Barmen and between Klein Barmen and Gross Barmen there are herds of cattle belonging to the farmers and to the natives who live in the Swakop valley.

Itinerary.

From Otjimbingue the Barmen road runs to the east along the river to Uitdraai (7 miles). There is a good well in the river bed here, fitted with a hand pump and troughs. The water stands at a depth of 4 or 5 feet below the surface of the river bed, and seems to be plentiful, as large herds of cattle are watered here every day.

From Uitdraai the road bends to the north-east and passes to the north of the Lieuwen Bergen (Mts.).

The road rises at a gradual incline on to a plateau covered with spare scrub 10 feet high, and broken by a few small rocky kopjes, and at 24 miles from Otjimbingue a road branches off to the north-west marked "To Karibib viâ Ongossa."

The road now begins to fall again, and at 26 miles Kwaaiputs is reached. There are here the ruins of a store beside the river bed, and a water hole containing a small quantity of water. The pumps mentioned by Major von François have been removed. From here onwards the road runs in an easterly direction over a succession of rocky ridges, and the Sny River is reached at 34½ miles.

Here there is a store kept by a man called Lange, and a copious water supply.

Klein Barmen (Otjikango Okatidi) is reached at 38½ miles. This place consists of only one store and some native huts, but there is an excellent spring of hot water, which when cooled is good to drink, and also a good well.

N.B.—Here a road branches off to the north-west, marked:—

To Fahlwater (Otchirungo) 31.1 km. (19.3 miles), and Karibib 98.8 km. (60 miles).

From here to Gross Barmen (Otjikango) the distance is $7\frac{1}{2}$ miles, and the road is very bad, at first rocky and steep, and later very heavy, the main stream of the Swakop being crossed four times before the police station at Gross Barmen is reached.

The police station and one store stand on a piece of rising ground 50 feet high, ½ mile north of the river. Along the river and in a depression to the west of the police station there are native houses.

There are a warm spring, a large spring of brackish water, and some water-holes in the river bed. On the west of Gross Barmen rocky hills come down to the north bank of the river, and to the north and east the country is undulating and covered with thick scrub.

South of the river the ground is open and well grassed, rising in rounded hills to a line of mountains some 10 miles distant.

Along the river there are Herero villages.

(3)

GROSS BARMEN TO OKAHANDYA AND WINDHOEK.

General compass direction :-

Barmen-Okahandya - - 90°
Okahandya-Windhoek - - 180°
Distance - - - - 57½ miles.

Along the Swakop River between Barmen and Okahandya there are many small Herero villages.

Five miles south of Okahandya a large native village called Osonna is passed, and no other houses are seen between Okahandya and Windhoek except Brakwater station.

The road is in many places sandy and heavy, especially at about 11 miles and at 24-26 miles, but there are no steep gradients.

Generally speaking, troops could move anywhere off the road except in the first 10 miles from Barmen, where the scrub is rather thick, and again near Brakwater station. Water can be found anywhere along the Swakop River, but south of Osonna the watering places are:

Teufelsbach Station, 30 miles—a good well.

Otjihavera, 33 miles—water pit.

Okapuka, 45 miles—several water pits.

Brakwater, 57 miles—well and water pit.

Uiams, 54 miles—water in hills \(\frac{3}{4}\) mile to west of road.

Large numbers of cattle and other stock are to be found near the Swakop river and at Okahandya and Osonna, but very few between Osonna and Windhoek.

Along the Swakop grazing is everywhere plentiful, though towards the end of the dry season it is rather eaten down by stock.

Between Osonna and Windhoek grass is scanty in the dry season except near the Otjihavera and Okapuka rivers.

Itinerary.

From Gross Barmen the general direction of the road is east tending to north-east. Two miles out of Gross Barmen the direct road to Windhoek viâ Otjisewa branches off to the southward. The Okahandya road passes over a series of low ridges, and strikes the Swakop River again at a distance of 10 miles from Gross Barmen, after which it follows the course of the river as far as Okahandya (15 miles) among large anawood trees, and past several small native villages.

From Okahandya, the Windhoek road follows the course of the railway as far as Teufelsbach (30 miles), the country being level and for the most part open, and the road rather heavy.

The Otjihavera River (50 yards wide) is reached at 18 miles from Okahandya. In the river bed there is a water-hole, and a pump and trough are in course of erection. The water was standing at some 10 feet below the surface in July 1903, and the quantity was small, but the water-pit was nearly choked and required enlarging.

Otjihavera River is crossed five times through heavy sand, and then a level stretch of country covered with thick scrub 12 feet high is traversed.

The road crosses the Okapuka River at 45 miles and then joins the road from Gross Barmen viâ Otjisewa, near a round-topped scrub-covered hill 100 feet high. In the Okapuka River there are several water-pits with a plentiful supply of water.

Brakwater station is reached at 51 miles, and from here the road follows the railway, passing, at 55 miles, along the east foot of some rocky kopjes 300 feet high. Between these kopjes and the mountain range which runs parallel to the road on the east side the whole way from Okahandya to Windhoek, the valley of the Okapuka narrows to a width of 2 to 3 miles.

At $57\frac{1}{2}$ miles the road, railway, and river pass through a narrow nek 300 yards wide between spurs of the mountains on the east and a kopje on the west, and from here Windhoek is seen a mile and a half distant.

(4)

ALTERNATIVE ROUTES FROM GROSS BARMEN TO WINDHOEK.

The alternative routes which may be followed in travelling from Gross Barmen to Windhoek instead of going viâ Okahandya (61 miles) are:—

- 1. Gross Barmen Otjisewa Okapuka Windhoek, 46 miles.
- 2. Gross Barmen-Otjisewa-Tumiberaobis-Windhoek, 48 miles.

From Gross Barmen to Otjisewa there is only the one road which follows the course of the Tamarisk River, and the main watering places are shown in Major von François' tables. (See Appendix IV.)

This road, which is an excellent one, runs nearly parallel to the Okahandya-Windhoek road at an average distance of five miles, separated from it by an undulating plain and a broken line of hills running S.E.-N.W. These hills, which reach a maximum height of nearly 500 feet above the plain, could be easily crossed by mounted troops and guns, but would be a serious obstacle to loaded wagons. Most of the country between the two roads is thickly covered with thorn scrub, and either some clearing or a careful selection of route would be necessary in places to allow guns to pass, but mounted men can travel anywhere across this country though not with much speed, probably not more than 6 to 8 miles an hour.

All operations would be confined to the space some 7 to 9 miles wide between the two parallel mountain ranges to the East and West.

From Otjisewa there is the choice of two routes to Windhoek, either viâ Okapuka or viâ Tumiberaobis and Nubuamis.

The German maps show a road running direct from Okapuka to Tumiberaobis across the hills to the west of Uiams, but nothing could be seen or heard of it.

The hilly country to the west of Uiams consists of a broken mass of hills rising to a maximum height of about 600 feet above the plain, and could be crossed without difficulty from north to south. These hills would form a good defensive position to protect Windhoek, but the plain to the north is covered with thick scrub and the river valley to the south of Brakwater is well wooded, so it would be possible to approach near the position unobserved.

The east flank would rest against high mountains and could not easily be turned; it might, however, be possible to find a practicable path up these mountains on to the plateau at the top.

N.B.—From the map of the Swakop valley it would appear that there is a road direct from Karibib to Okahandya running along the railway, but no report on this road is at present available.

(5) WALFISCH BAY TO SWAKOPMUND.

The road from Walfisch Bay to Swakopmund, 22 miles, runs along the beach between the sandhills and the sea. No water is to be found and in places the going is heavy, but by starting shortly before low tide the distance can be easily ridden in two-and-a-half hours. The distance of the sandhills from the beach varies, but it is never more than a mile. These sandhills, some of which reach a height of 300 feet, appear to be caused by the prevailing south-west wind. The general direction of the ridges is parallel to the coast, and they are deeply scarped on the inland side. All along the road there is plenty of fuel to be found in the shape of drift-wood on the beach, but no grazing of any sort and no water.

The road, though seldom used by carts, is everywhere well marked by wheel-tracks, except in places where the track is below high-water level.

At a distance of 41 miles from Walfisch Bay a ship's leading mark is reached, and beside it is the telegraph hut where the ends of the cables from Mossamedes and Cape Town come ashore and are connected to the loop which runs to Swakopmund.

Half-a-mile beyond the telegraph hut a spur of the sandhills comes down to the beach, and there is a short stretch of heavy sand to be crossed. At 7½ miles from Walfisch Bay the "long beach" is reached, which runs unbroken for 8 miles, to within 5 miles of the Swakop River. This beach is strewn with drift-wood, large numbers of whale bones, and between the beach and sandhills there is a level sandy plain averaging about \frac{1}{2} a mile in width. After the long beach the road leaves the sea shore and cuts across the level sand to the Swakop River (201 miles).

Just before reaching the Swakop River a spur of the sandhills comes nearly down to the beach. On rounding this, Swakopmund is seen on the ridge beyond the Swakop River at a distance of about 2,000 yards. The river bed is some 300 yards wide, covered with heather and small bushes, and with banks only about 3 feet high. From the north bank the ground rises evenly in a gentle slope to the plain 1,000 yards distant and 50 feet high, on which the town is built.

(6.)

KARIBIB TO OMARURU.

General direction - - - North.

Crow-fly distance - - - 33 miles.

By road - - - - 37 miles.

Stages (dependent on water supply): - Etiro (17 miles), Osambimbambo (29 miles), Omaruru.

This is the main mail, traffic, and trade route to the north from the Swakopmund-Windhoek Railway. Except between the 3rd and 9th, the 20th and 24th, and 32nd and 34th miles, it is a hard unmetalled road; average width 20 feet. The portions indicated above are heavy sand. Between the 9th and 11th miles vehicles cannot move off the road, and in most other portions the scrub would have to be cut to enable them to do so. The country is unfenced. The whole road entails slow heavy work, sometimes requiring double spans.

The general surface of the country is in dry weather firm stony soil, but in wet weather it is in many places very boggy. It is generally covered with low thorn bush scrub, rendering patrol work off the road difficult.

Supplies are scarce, there is no water away from the water-holes, but there is firewood in abundance. Rinder-pest and lung-sickness occur sporadically all the year round. During the wet season poisonous herbs must be guarded against until Etiro is passed.

Itinerary.

Leaving Karibib at the west end of the town, the road runs northwards about 600 yards to the well, which

is the main water supply. Thence it turns to the N.N.E., which direction it follows to Etiro. From about the 3rd to the 9th mile very heavy sand is crossed, with sparse thornless scrub on both sides of the road; at about the 5th mile point a dry creek bed is crossed. The banks are not high, but the pull is very heavy. At about the 7th mile another road joins this one from Otjimokoko (9 miles S.E.)—a station on the railway 8 miles east of Karibib. Thence the road drops down sharply through a shallow ravine which continues for about 3 miles, when a farmhouse with a small well on the west side of the road is reached (10 miles). This was originally the Etiro outspan. Here there are about 10 acres of open space shaded by tall acacias, commanded on all sides by rocky bluffs. Soon after leaving here, a steep incline necessitating double teams for a loaded wagon is encountered for a quarter of a mile. About a mile further on the Etiro River is reached; the outspan place is on the south bank of the river. Store and well on north bank.

The river bed (about 100 yards wide) here runs from east to west, and parallel to it, on the north side, and 400 yards from it runs a narrow granite dyke about 60 feet high and about 10 feet wide on the top. This dyke, completely masked by tall acacia trees, commands the road as soon as it reaches the top of the incline which commences at the farmhouse. Behind the dyke the ground is fairly level, affording shelter for a large body of men. By following the rocks around to the left from the farmhouse (10 miles) a position may be gained whence the dyke can be enfiladed at a range of 1,000 yards. Immediately behind the store the ground which is covered by a dense low thorn bush scrub rises gradually, and to the north-west of the store a low ridge, about 50 feet high and 60 yards distant on the opposite side of the road, runs at right angles to the river back to the dyke.

The water supply here is practicably inexhaustible. There is a well near the store, and a second about 400 yards up the river on the same side. Both are used to irrigate small vegetable gardens. Fuel is abundant, but the grazing is bad.

Leaving the outspan, the river bed is crossed by a heavy sandy drift which necessitates double spans. The direction to Osambimbambo is N.N.W. The road rises about 1 in 30 for one mile, when open undulating country with little scrub is traversed. The road is hard in all weathers, but is uneven and contains many sharp dips and rises. At the 14th mile the road is commanded by a hill (150 feet above the road) about 1,000 yards to the east. At the 15th mile the road crosses a donga with heavy sand about 50 yards wide. An outspan which is on an open rise is then reached. From it a high isolated kopje is seen ahead. It is distant 5 miles, and the next outspan lies 600 yards west of it. The road passes immediately under this kopje.

From the 15th to the 20th mile the country is covered with thick thorn bush scrub, and heavy sand extends for the last 3 miles of this stretch. Just before reaching the outspan at the 20th mile a deep donga is crossed. The grazing here is fair. Water in small quantities is obtainable 3 miles W.S.W.

One mile beyond this outspan a deep gully is crossed. The bank leading into the gully is of easy gradient, but that leading from it is about 1 in 12 for 200 yards. Heavy scrub continues. About the 26th mile there are some high rocks close to the road on the east.

After thunder storms water in small quantities may be found in depressions in these rocks. There would be about 200 gallons of water altogether. 500 yards past these rocks the road crosses a heavy, sandy creek bed, width about 100 yards. The road rises by an easy gradient to the outspan (28th mile), which is on the north bank of a narrow creek. There is a small supply of water in some pits about 400 yards east of the road. Near the pits are about a dozen Damara pontocks (huts). This water supply disappears shortly after the wet season, and from August to January cannot be depended upon. The grazing is poor. A gradient of about 1 in 30 leads from the outspan for ½ mile, after which the road runs level for ¼ mile, and then dips 1 in 25 for ¼ mile, which brings it to a river bed about 100 yards in width.

This place is Osambimbambo (Osombembande) (29 miles). The only buildings here are three Damara pontocks. There is a large Damara village down the river about a mile from the crossing, and visible from the top of the rise just crossed. Europeans do not remember this river ever running, but it contains a good soakage. A circular stone-faced well, 12 feet in diameter and 24 feet deep, has been sunk by the Government in the drift near the north bank of the river, 25 yards west of the road. A cement drinking trough 16 feet in length is alongside it. There is also a large open unstoned pit on the east side of the road, from which four oxen at a time can drink, and there are numerous pits in the drift opposite the village mentioned above. If the season has been a good one, the water supply is abundant for the first eight months in the year, the flow in the soakage being very strong. It is said by the natives to never run dry. In October, 1902, the supply was scanty and bad, and in February, 1903, it was abundant and good. The grazing here is very bad on account of the large numbers of cattle and sheep grazed by the Damaras.

After crossing the river bed, which is heavy and necessitates double teams, the road turns N.N.E., and continues in this direction until Omaruru (32 miles) is reached. About 3 miles from the river there is a small isolated kopje on the eastern side of the road. From this kopje signalling communication could be established with Omaruru, also back to the kopje at the 20th mile, and thence to Etiro and Karibib. The road here is about 3 in 4 miles from a high range of hills to the westward, and runs through heavy scrub. A very heavy creek bed is crossed, and after an easy rising gradient for about 1 mile, an outspan on the top of the ridge in sight of Omaruru is reached. At this outspan there are numerous native pontocks and a small brick house. Water is obtainable in pits in the Omaruru River about 1 mile to the north.

Immediately beyond the outspan another creek bed with high banks is crossed. The road in crossing this creek turns eastward down an incline, 1 in 20, for about 600 yards. Beyond the crossing, which is heavy, the

road continues N.N.E. up a steep ascent, 1 in 15, for 300 yards, and so to Omaruru. The country is open.

Omaruru (37 miles). The garrison or military build ing, which is the first one met with on entering Omaruru, is of brick, about 150 feet long and 75 wide, with castellated walls about 25 feet high. There are small towers at each corner. The walls would not withstand modern rifle fire. Within the building is a courtyard surrounded by men's quarters, military offices, stables, and storerooms. There are large stores of ammunition, rations, spare parts of wagons, &c.

The road runs east of and close to this building, which faces the river. 250 yards further on are three brick dwellings in a row on the same side of the road, which now turns north to cross the river, the width of which is here about 200 yards. Opposite the last of the above houses stands a large hotel and store, built of brick. Close by lies a fairly large brick dwelling-house, faced with cement; and some 400 yards beyond are some brick cottages occupied by Government officials.

The drift over the river is very heavy. A Flemish Mission Station, consisting of a few small brick buildings and a church, situated in a large garden, lie just north of the drift. The road turns to the east, and the village proper is entered. The street is about 600 yards long, and the buildings along it consist of a small brickbuilt school, 5 stores (including Taplow's and Wronsky's), 2 canteens, 2 wagon-makers, a bakery, and 7 or 8 dwelling houses. The principal buildings are of brick, the others of corrugated iron and wood.

A number of native pontocks also stand near the street, and a large outspan adjoins it. Water, which is all river soakage, is plentiful. In the dry season the bed of the river is sown with wheat, which ripens in October and yields well. There are extensive fruit and vegetable gardens, extending for about 6 miles, along the north bank of the river east and west of the village. Grazing is bad.

A heliograph signalling station exists on an isolated hill (250 feet), about 3 mile east of the Military building and south of the river.

(7.)

OMARURU TO OUTSPAN 1 MILE NORTH OF OTJOMBONDE.

General direction - - - N.N.E.

Crow-fly distance - - - 42 miles

By road - - - - 43½ miles

Stages (dependent on water supply):—Epako

(12 miles), Okawatjivi (36½ miles), outspan

1 mile north of Otjombonde.

Portions of the road (average breadth about 20 feet) are very heavy sand and almost impassable in wet weather. In a few places vehicles cannot move off the road. There are no fences. Normal rates of marching can generally be maintained, except in the sand country. Owing to the meagre water supply it would be difficult to march columns of more than about 250 men along this road.

The country traversed consists of low ridges with steep gradients intersected by heavy sand, river beds, and sand-flats. The surface is generally rock or firm soil, thickly strewn with sharp boulders, and covered with scrub, chiefly thorn bush. Water, except in the wet season, is unobtainable except at the outspans indicated. Firewood is abundant. Supplies, except meat, are not procurable. Grazing is not good between September and February, and as a rule is scarcer about the outspans than elsewhere. The natives make no mention of poisonous herbs.

Leaving Omaruru at the eastern end of the village, the road crosses a narrow heavy creek bed and turns N.N.E., ascends for ½ mile (1 in 30) and continues over undulating rising country covered with dense thorn bush and boulders. Note.—Another track runs north-east.

Outspan (7 miles)—eastern side of the road. No grazing. About a mile east of the outspan is a rocky ridge (300 feet) about 3 miles long, running north-east, with a low "Spitzkop" at the northern extremity.

At $9\frac{1}{2}$ miles the road becomes commanded by the Epako Berg, a ridge on the western side about 500 feet

high and some 3 miles long. Passing under the north-eastern end of Epako Berg, the road descends gently, crosses a sandy donga bed 40 yards wide, and then ascends 1 in 15 to Epako outspan (12½ miles).

South of the donga and east of the road stands Epako Police Station, a small two-roomed brick building. Near it is a well 25 feet deep and 8 feet in diameter, stone faced and fitted with a pump. Trough alongside. The water supply appears plentiful, and the quality excellent. An open water-hole is situated in the donga bed west of the road. Fair grazing 1 mile east of the outspan. A kopje (250 feet) lies \(\frac{1}{4}\) mile north of the outspan. About 4 miles north-west there is a range of hills with prominent peaks. The intervening country is cut up by deep dongas.

Leaving Epako, the road continues N.N.E., ascending gently for about 3 miles. Considerable ranges of hills are now visible on the horizon at a distance varying from 10 to 15 miles north-east to 3 or 4 miles west.

At 17½ miles the road crosses a donga 100 yards wide, with sand bottom. Heavy acacia timber 50 feet high and 1 to 4 feet diameter grows here.

The road crosses a loop made by the donga, and reaches an outspan (18½ miles) on its southern bank. A high ridge rises from the northern bank. There is no grazing. Crossing the donga (100 yards heavy sand), the road ascends fairly steeply to the crest of the ridge, which it follows over level country to the next outspan (24½ miles), situated near the western bank of a donga which joins the one previously crossed near the 18th mile. Scrub sparser than hitherto. Little grazing. The road, continuing N.N.E., crosses the shoulder of a ridge between a cliff on the eastern, and rocks on the western, side. These form a defile 150 yards long, after passing which the road (15 feet wide) descends to and crosses a donga. The country to the westward is open.

Thence the road crosses a small ridge with detached kopjes running north. Between the ridge and kopjes is a fine grass valley sparsely timbered with trees resembling the Australian Beefwood. A donga, with mimosas

At $30\frac{1}{2}$ miles another outspan is reached. Splendid grazing. No water. Thence the road is sandy, and ascends slightly as it crosses a spur.

Two miles from the outspan a wagon track branches N.N.W.

The road now descends, and at 33½ miles crosses a deep and broad donga with steep banks. The ascent out of this donga is about 1 in 20. The scrub is not dense here. Grazing is good. Small isolated kopjes rise from comparatively level country to the westward.

The road becomes commanded by a ridge (600 feet) in mile north-east. Scrub is now dense on the western side of the road, which rises steadily past a sugarloaf kopje (400 feet) also on the western side of it. This kopje is densely wooded. A ravine runs north.

At 36½ miles a gentle descent commences to the Okawatjivi outspan and Police Station. The latter is occupied by two troopers.

A trading store is close by, and there are a number of pontocks near it. Fifty yards south of the Police Station is a Government circular-covered well, sunk in the rock; depth, 25 feet; diameter, 8 feet; partially stone faced; fitted with windlass, bucket, and chain. Water is mineralized, but good. A drinking-trough is alongside. The water supply is very good.

100 yards south-east is another and larger well, sunk by a trader. Water has been reached at 16 feet, and the supply is plentiful.

East and west of the outspan the country is rising, rocky, and broken.

On leaving the outspan the road continues N.N.E. across a donga, 30 yards wide, with easy banks and firm bottom.

A quarter of a mile further on a road branches northeast to Otavi. A line of kopjes east of the road now commands it.

To the west the country falls away, and then runs level to a range of hills 2 miles distant. The intervening

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country is dense scrub, which becomes sparser near a Herero chief's village (38½ miles) close to the road. This village possesses large numbers of sheep and goats, and some fine cattle, which indicate the presence of good water in the vicinity.

A shallow valley, \(\frac{3}{4} \) mile wide, flanked by low ridges, is entered at 39 miles. The valley is full of scrub; the roadway cuts up badly.

An easy ascent leads to a low ridge which is crossed. Scrub becomes sparser. Undulating country, containing splendid grazing, is traversed, and Otjombonde, a small Herero village, is reached (42½ miles); it is situated on a rise just west of the road. This village also has a quantity of stock. The valley traversed at mile 39 becomes a gorge, passing ¼ mile west of the village, and joining a donga ¾ mile north-westward.

The track, which branched at mile 32, rejoins the road. About $\frac{3}{4}$ mile along it is a native water-pit (40 feet deep), on the eastern bank of the donga and the southern side of the track. Water is passed up by hand, 7 or 8 natives standing on a rude ladder. Good supply.

An outspan can be made at the village or near the pit, but it is better to proceed a mile beyond the village, where the ground is open. About 3 miles east of the outspan there is a range of hills (400 feet high), running E.N.E.

(8.)

OUTSPAN 1 MILE NORTH OF OTJOMBONDE TO OUTJO.

General direction - - N.N.E.

Crow-fly distance - - 57 miles.

By road - - 59 miles.

Stages (dependent on water supply):—Otjikango (22 miles), Umuramba (39 miles), Palafontein (51 miles), Outjo.

The country for the first 6 miles is similar to that traversed in coming from Omaruru. Subsequently long

ground is covered with scrub, chiefly thorn bush.

Itinerary.

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The road takes a N.N.E. course from the Otjombonde outspan, through dense scrub of heavier timber than before met with, and but little thorn bush.

The first outspan is at $5\frac{1}{2}$ miles, on an open space, $\frac{1}{2}$ miles wide, running across the track to the hills 2 miles east. Grazing good. Thence the road runs through timber country and across a donga.

At mile 11 is an outspan situated on both banks of a small donga crossing the road.

Timber country continues, but a rising gradient in heavy sand commences. Range of hills visible now and then to the eastward, gradually closing on the road.

The next outspan is 4 miles further on, near a small "vlei" holding considerable quantity of water after rain. Fair grazing west of the road. A kopje 600 feet high commands the outspan at about $\frac{1}{2}$ mile range.

A mile beyond this outspan the hills to the eastward close on the road. The scrub is here sparser, and the sand heavier. Scrub again becomes dense. The road is still sandy. Four hundred yards west of road, at mile 18, in the scrub is a small "vlei" 50 yards across. Close observation will show a small path leading to it. This "vlei" holds water when that at the outspan contains none.

The scrub is now lower, and is mostly thorn bush. Country flat towards a kopje to the westward, and falling gently to the eastward.

In a depression, ½ mile wide, lies Otjikango (22 miles). Water from a small spring 25 yards west of the road. The supply is deficient, and in dry season cattle are only allowed to water once. A little work on the spring would produce a plentiful supply. Hills to the east. Country falls gently to the north-west.

Heavy sand and very dense thorn bush is now traversed.

There is a small "vlei" 30 yards wide on eastern side of road at mile 25 and at mile 27, a "vlei" 100 yards across lies on the western side of the road. (Neither of these "vleis" hold water except after heavy rain storms.)

This is an outspan.

The road now bends to avoid boggy ground in the wet season. Heavy sand is crossed. The country is sandy and covered with scrub, falling gently northwards to the 38th mile.

Outspan (33 miles). Poor grazing. Scrub is more open. About 15 to 20 miles east a big range of mountains is seen.

At the 37th mile a track branches east towards Paresis Berg, near which there is a large Damara village, distant about 5 miles.

The Umuramba River bed, running eastward, is crossed at 38 miles. It is dry, with a hard bottom, between high banks carrying heavy timber.

One mile further on there is an outspan. Four hundred yards west are two native water pits in a branch of the river. These are 30 feet deep, with steps cut down to the water, which is scarce in the dry season. A quarter of a mile north-west of the pits are a number of pontocks on a low ridge.

The branch of the Umuramba River is now crossed; width 40 yards, sandy, with low banks.

The road then ascends gently over a thickly-wooded ridge covered with boulders. This is the watershed between the Umuramba and Awa-Hu-Ab Rivers, and extends to the outspan (45 miles) situated on a spur of the main ridge, which is seen bearing away north-west. To the east the ground falls away from the outspan to a donga 2 miles distant. East of the latter the outlying spurs of the Waterberg Range commence.

The road now crosses a depression, and then a shallow valley, with a donga running east. A track comes in from the south-east.

A gentle ascent for 1½ miles follows. The range of hills to the west is now about ½ mile distant, and to the east there is broken ground.

The road passes within 200 yards of the above range, and at mile 50 a donga is crossed, which is believed to be the source of the Awa-Hu-Ab River. The road winds up its north bank (here 60 feet high), and turning northeast reaches Palafontein (51 miles), where there is an outspan on level ground at the foot of a short descent of 1 in 20. Near the outspan are about 6 to 7 acres of partially fenced gardens, containing an unfinished well with water at a depth of 17 feet.

A wall of rock (25 feet) lies between the outspan and the donga (Awa-Hu-Ab), which here turns northward.

A main well, 15 feet deep and 10 feet in diameter, lies on the southern bank of the donga. Water is raised by a "whip," and there is a drinking-trough. The supply is from an underground stream, and is practically unlimited. (The watering of 400 head of cattle here makes no impression.)

A brick house, on a rise 100 yards south of the well, is occupied by the families of a Boer farmer (de Jager) and a German.

These are sons-in-law of Lambert (the owner of the farm)—an Englishman by birth who became a naturalized German in order to retain his property. He was in the territory before the Germans took it over and purchased his land from the natives. His sympathies are anti-German.

A track, running north from the house through the scrub, joins the main road beyond the settlement.

Another well—used for irrigation—lies 400 yards along this track. There are two furnaces north of the house. These were used for smelting lead ore to make bullets for Hendrik Witbooi when he was in rebellion against the Germans. They would make excellent ovens for troops.

Palafontein is a very important point, owing to its excellent water supply. Grazing is excellent. The

country between the farm and the range of hills, about 6 miles south-east, is broken with small kopjes.

Leaving the outspan, the donga is crossed, and a wagon track branches east.

A clearance in the scrub, 60 feet wide has here been made for the road, which runs straight to Outjo, descending gently to a donga.

The public outspan is reached at mile 53.

The road now ascends very gently till at the 57th mile it becomes commanded by the Outjo plateau (150 feet), 600 yards distant.

The gradient becomes rather steeper as the road passes up a kloof leading to the terrace. The road is commanded from both sides at close range. Keeping along the western bank of a ravine, the road rises at a gradient of 1 in 20 to the Outjo outspan (59 miles).

Outjo is the principal military post in the north of the territory. It lies about 2,000 yards from the edge of the "Outjo Stanstem Terrace" (Langhan's Map).

The village, which lies north of the outspan, is situated in a hollow, surrounded on three sides by ridges. That to the east holds numerous pontocks, and commands the village, but, in its turn, is commanded by a wooded kopje (500 feet), 1,000 yards north. The ridge to the east is about 200 feet high.

The Okaukwejo road turns off to the north-west from the outspan, and the Grootfontein road continues north for about 400 yards. In the angle between the two roads is the Damara and Namaqualand Trading Company's store, a small wood and iron building, facing the Grootfontein road, and 50 yards past this store on the Grootfontein road, and about 30 yards off the road on the eastern side, is a magazine built of brick—about 25 feet by 15 feet, with walls about 12 feet thick. On the western side of the road, 100 yards distant from it, is a long brick building faced with cement, with its end towards the road and facing north, containing the Police and Military offices. At about the centre of this building, distant 10 yards, and at right angles

to it is a small brick building used as a jail. Westward from its northern end is a large building used for military stores. Behind the Damara and Namaqualand store, 200 yards west, is another large building used as barracks. Coming to the road again, 200 yards on the western side, is a large cottage occupied by the captain commanding. One hundred yards further on the road changes its direction to the east, and just where it turns there is, on the northern side, a fairly large brick building faced with cement, with castellated top, used as a guard-room and orderly room. Immediately in front of this building and between it and the road is a low pedestal, used as a signal station, whence a splendid view of the country east and south is obtained. West of this building and a little behind it, leaving a roadway between it and the commandant's cottage, is a large building, used as a stable, with a very large loft. The above-mentioned roadway turns north, past the west end of the stable, and then turns sharp to the west, and runs to the top of the ridge, where it joins the Okaukwejo road.

Along this road for a distance of 200 yards are various brick buildings, one of them being a store and hotel. Returning to the guard-room, the road continues east, crossing the main ravine 50 yards further on. A few yards after crossing the ravine, and about 30 yards from the road on the north side, is another building, used as a magazine. About 200 yards on, on the south side of the road, is a dwelling house (Lambert).

On the northern side of the wooded kopje to the north, which commands the post, a road has been cut by which guns can be taken to the summit. There are supposed to be sufficient stores on this station to keep the garrison for seven years. Certainly, the store accommodation is sufficiently large to hold them.

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(9.)

OUTJO TO OKANWEJO (OKAUKWEJO).

General direction - - - N.N.W.

Crow-fly distance - - - 70 miles.

By road - - - 73 miles.

Stages (dependent upon water supply):—Otje-

Stages (dependent upon water supply):—Otje-magundi (18 miles), Otjowasandu (36 miles), Ombika (60 miles), Okanwejo.

This is the only route to Central Ovampoland. Except in wet weather it is a very good road.

In wet weather the road is very boggy, and impassable in places. The first three months of the year are usually the worst. The wet season generally sets in about Christmas, and continues until the end of March or middle of April.

There are no heavy gradients. Vehicles can in most places move off the road. Where they cannot do so it is on account of the scrub, which in places is very dense. Average width of road, 20 feet. The usual rate of marching can be maintained. The days are not excessively hot, and the nights are cool. Night travelling, if the country is known to be clear, is desirable on account of the oxen. The country traversed is nearly free of hill ranges, and where these exist they are narrow. Generally speaking, the scrub is composed of much heavier timber than hitherto encountered, and there is less thorn bush. Patrol work is comparatively easy for men accustomed to bush country, but would be very confusing to plainsmen on account of its sameness. Supplies on the road are unobtainable, except buck, gemsbuck, koodoo, and in one place wild pig, which are fairly plentiful, but not in sufficient numbers to feed a column.

There is no water away from the water-holes, but water-roots abound. One of these contains sufficient moisture to quench the thirst of four men. There are different kinds of yams, many of them poisonous, and men should be cautioned against eating any of them.

(N.B.—The water-root has a small vine resembling some of the yams, only smaller, and in the dry weather it completely dies away, leaving a small stalk. The root commences about six inches under the surface and goes down vertically. At its widest part the root is 8 inches in diameter and 18 inches long. Its appearance is that of an abnormally large parsnip.)

A large item in the food of the bushman and other natives of this part is a plant they call augwies. It is plentiful, and resembles in growth a low swamp grass. When pulled, the roots are rather like an ordinary grass root, but a larger filament or root will be observed in the centre, broken in the pulling. By digging 4 to 6 inches below the surface a small onion-like bulb will be discovered. This is what is eaten. The native women dig the ground where they find the augwies growing to a depth of 1 foot, and then pick the augwies out. They may be eaten raw, roasted, or boiled. A knowledge of these two plants may make all the difference between life and starvation. Cattle diseases are similar to those mentioned in Road Report, No. 6. Good firewood and grass is abundant. There are no reports of any herbs which are poisonous for cattle.

Itinerary.

Leaving the Outjo outspan, the Okanwejo road runs north-west, crosses the ridge west of the village, and descends westwards to a ravine, from which point the road to Franzfontein and Sesfontein branches west.

The road turns north-west over another rise, and descends to a considerable donga running from the kopje north of the village. The ridge west of the village is covered with dense scrub up to this kopje, and the same exists from the kopje to the donga. Thence the road ascends gently for 3 miles over hard soil, comparatively free from scrub, becoming commanded from the 2nd mile by kopjes (200 feet high) \(\frac{1}{2}\) mile west of road. At mile 4 there is a kopje about 400 feet high some 1,500 yards east of the road.

The road (still flanked by kopjes to the west) continues to an outspan at the 6th mile, which is commanded by a wooded broken range of hills crossing the road about 1 mile north. Leaving this outspan, the road becomes sandy, and enters dense scrub containing heavier timber, as it passes between kopjes in the range above mentioned. The hill to the west is 100 yards distant only. The road is nearly level. After clearing the range, which is ½ mile wide, the sand becomes heavier and the scrub continues, the road having an average width of 20 feet. A system of "vleis," commencing 50 yards west of the road, runs in a south-west direction to the range. These "vleis" are in heavy scrub, and are not visible from the road. After rainstorms they contain a lot of water.

Continuing, the road remains nearly level, with occasionally places where the scrub is more open.

The next outspan (12 miles) is on one of these open places. Grazing is fairly good.

From here to the 16th mile the road is nearly level, crossing black soil country, impassable in wet weather, with grass and sparse scrub. It continues level over limestone with sparse scrub from the 16th to the 18th mile, when Otjemagundi is reached. The water here is found in three shallow pits in an open space 50 yards west of the road. In the dry season it would be difficult to water more than 100 oxen from them without waiting for the slow oozing soakage. A road leading to the Kaoka veldt and Franzfontein branches west from here, running south of the pits.

Leaving Otjemagundi, thorn bush and boulder-strewn ground makes patrol work almost impossible for 2 miles. To the 19th mile the road continues level over limestone, and a small donga is crossed in low broken country, which continues to the 20th mile. Then the road crosses more rising black soil country, strewn with limestone boulders and covered with sparse scrub, to the next outspan (24th mile), which is at the foot of a small rise. Grazing here is very good. A range of kopjes (400 feet high), $1\frac{1}{2}$ miles long, lies about 1 mile north-east of the outspan. It is a favourite haunt of koodoo.

Leaving the outspan, the road turns N.N.W., and crosses undulating, rising country. Sparse scrub continues, and the soil is sandy, with black soil in the depressions. At the 25th mile the kopjes mentioned at the last outspan command the road at 1,200 yards. Commencing at the 28th mile the scrub is dense, and the road becomes commanded from a range of wooded hills (300 feet high) on the west at 1,000 yards.

The road now passes close under these hills. It then descends slightly for ½ mile, the scrub becomes more open, and ½ mile further on an outspan (30th mile) is reached in open park-like country, splendidly grassed. The range of hills to the west extends in a W.N.W. direction. A low range on the eastern side of the road, 100 feet high, runs south-east for about 6 miles.

Leaving this outspan, the road continues by easy ascending gradients for 4 miles through park country. After this the limestone comes in again, thorn bush appears, and the country becomes broken. The road, however, has been cleared of boulders, and the gradient continues even.

At 36 miles Otjowasandu is reached. A space of 4 acres cleared of boulders is used as an outspan. There is a strong spring, 50 yards west of the road, which fills a circular basin, 100 feet in diameter, to a depth of 18 inches. The basin has been walled with limestone boulders, and is used as a watering-place for stock. Watering 150 head of cattle makes no impression on the supply. Alongside the basin is a water-hole fed by the spring. It is 2 feet 6 inches deep, 6 feet long, and 3 feet wide, walled to a height of 4 feet on three sides, and covered on the top with a thick thatching of rushes. This water-hole is used for domestic purposes, and the water is the best met with in the territory. This is the last water before Ombika (60th mile) is reached. Water-less trek, 24 miles.

Near the watering-place are the limestone walls of a house, built by the Government for the use of the police; the house is said to have become so infested with snakes

that it had to be abandoned. No police are stationed here now.

There is excellent grazing on open park-like plains mile east of this water. A high hill (800 to 1,000 feet high) rises about 10 miles south-east. From it a range about 6 miles distant sweeps north and west.

A wide footpath branches westward to the range of hills passed at the 29th mile, here about 400 feet high and about 6 miles distant. These footpaths are a feature of this country. This one leads to some Bushman villages in the range. These paths always lead to water, and if followed will either land the traveller at the village, where a drink may be obtained, or to a water-hole

Leaving Otjowasandu, the road runs N.N.W. Limestone and low broken country covered with dense scrub on both sides of the road for 2 miles.

Descending gradually from the limestone, the road crosses black soil, which is impassable in wet weather. It runs nearly level over this to the next outspan (42nd mile).

At mile 40 a spur of the range of hills to the west commands the road at a distance of 400 yards. The end of the range to the east also here approaches within a mile of the road. Its height is about 400 feet. A small, shallow donga crosses the road running north-east.

The outspan at the 42nd mile is on an open space west of road. Grazing good. No water. The road continues through dense scrub over black soil, the ground being low and undulating, to the next outspan (mile 48). The scrub changes to occasional trees of a larger kind, with low thorn bushes and small shrubs. The soil becomes sandy. The grazing is poor.

From here the same sort of country continues, with a slight downward gradient to the 52nd mile, when the road crosses the end of another spur (75 feet high) from the western range of hills.

At 54 miles another outspan is reached. Here a strip of grass country some 300 to 400 yards wide, with good grazing, runs along the eastern side of the road. These

openings in the scrub are henceforth characteristic of this scrub country. The timber suddenly ceases and grass replaces it; and the open belt winds for miles through the bush.

Thick scrub now lies to the west of the road as far as the 56th mile. The country is comparatively level. The ground is strewn with limestone boulders. At $58\frac{1}{2}$ miles there is a small kopje (150 feet) 100 yards east of road.

Here the road dips slightly into a flat, sandy basin, fringed on the south and west by the limestone country, and on the north by a densely-wooded ridge about 50 feet high. The end of this ridge is crossed at mile 59¼, and then, falling slightly, the road passes through flat mimosa country to the Ombika outspan (60th mile).

The water-hole at Ombika is similar to that at Otjowasandu. Bulrushes slightly taint the water, which should be boiled. Millions of birds come to drink at this water. Grazing is good to the east and north. The range to the west is about 4 miles distant.

Leaving Ombika, the road runs nearly north for about 13 miles through heavy scrub, in which the mimosas predominate. The soil is black, with limestone boulders.

At 73 miles Okanwejo is reached. The outspan lies 1 mile south of the military post, and a narrow track, cut through the scrub, leads thence to the water, which is situated 300 yards N.N.W. Supply is from a well, 10 feet in diameter and 16 feet deep. A cemented trough is used for watering stock. The water supply is abundant (250 cattle and horses and a number of sheep and goats made no impression on it). A depression close by forms a circular basin, about 100 yards in diameter and 20 feet deep in the centre. It is said to be quite full of water in the rainy season.

Entering Okanwejo, the first building met with is a bungalow erected of teak matchboards, containing two rooms, surrounded by a broad verandah built upon the top of an iron framework 10 feet above the ground. This is occupied by the officer commanding. It is situated 60 yards west off the road, 250 yards north-east

from the outspan. One hundred yards north of the bungalow, on a rise of ground 30 feet high, is the military post—a brick building, about 60 feet by 20 feet, facing east, and containing the men's quarters and dining-room. Just east of this is a large store-house, a large stable and forage stall, and a small canteen—all built of stone. About 30 yards north-west of it is a small stone-built store, facing the road. Behind the store is a large stock-yard, built of posts and rails. One hundred yards east of these buildings are numerous native pontocks.

One hundred yards north-west of the civilian store, on falling ground and west of the road, is another outspan called the top outspan. From here three roads branch off. One runs north-west to Okahahana, another north to Okandeka, and the third east to Amutani. A cleared track runs from the men's quarters to the water-hole, and another runs south-west from the south outspan to a small brick-yard. The range of hills is here 10 miles west, and ends about 10 miles to the north-west.

Lions are troublesome on this station.

(10.)

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OKANWEJO (OKAUKWEJO) TO OLUKONDA.

General direction	5014		-11	- N.
Distance by road	1	117	miles	(Approx.)

Stages:-

(1)	Okakahana	-		-		36 miles.
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- (2) Okahanja - 48,
- (3) Nohorongo - 74 ,,
- (4) Karoka - 114,,
- (5) Olukonda - -

This is the most reliable trade route from Okanwejo into Ovampoland. It is little used. The road is chiefly

through heavy sand. There are no difficult gradients. Vehicles can move off the road in most places.

This road, though longer, is preferable to the eastern one (Road Report, No. 11).

The country traversed consists of rolling downs, in places covered by thick scrub. The general surface is sandy soil without stones. Water is very scarce, supplies unobtainable, and firewood has to be carried for the last 30 miles.

Grazing is everywhere abundant in all seasons. For remarks on stock diseases, see Road Report, No. 6.

About Nohorongo, a burr with long spines, is destructive to the feet of the oxen.

There are no regular outspans, the distance traversed daily depending on the time of year. May, June, and July are said to be the best months to travel.

Itinerary.

Leaving the northern outspan at Okanwejo, the road takes a W.N.W. direction across a slight dip, and over a gentle rise. Scrub on either side. Thence a gentle decline, the scrub west of road now being a mile distant.

A wooded rise (height 50 feet) lies 250 yards west of road. The general direction now becomes north-west The road ascends gently, and cactus grows on either side of the track.

At 6 miles there is a small "vlei" with fringe of water bushes. Thence the road is nearly level over soil which is hard in dry, but almost impassable in wet, weather.

The cactus growth ceases, and sparse scrub appears. At the 12th mile another small "vlei" 50 yards west of road is passed. The road now crosses the western side of an open plain.

The country becomes sandy, and covered with a low trailing thorn bush impassable by man or beast.

The road descends gently, and sparse scrub replaces the thorn. A plain lies east of the track. At 18 miles a "vlei," surrounded by timber, lies 50 yards west of road. Gently rising ground 1½ miles west of it. The road now ascends gradually through heavy sand to the 21st mile, with, for the last 2 miles, thorn growth on either side. It descends gently through open country for about 3 miles, and then rises again for the same distance. A belt of bush growth 30 ft. high then extends forward for 2 miles. This belt recedes to 1½ miles north of road at the 30th mile. The gradient is a gentle descending one through open country.

At 30 miles a "vlei," surrounded by timber, lies 50 yards west of the road. Immediately beyond this "vlei" a saltpan about 1 mile wide is crossed. Its bed is friable soil, impregnated with salt, and the going is very heavy. This pan follows the course of the road, and is about 1 mile west of it. Four miles north-west of the "vlei" is a shallow water-pit on the western edge of the saltpan. About $2\frac{1}{2}$ miles west of this pit is a kopje, below which a number of Hereros dwell. A party scouting to the west could rejoin main road by a track running through the saltpan to the water-pit at Ökakahana. This track is not practicable for wagons.

The road now strikes sand bordering on a thickly scrubbed ridge, about 40 feet high and 100 yards distant, rising to the north. It flanks the road thus for 2 miles. The saltpan to the west is here about 2 miles wide.

At the 33rd mile the road turns N.N.E. round the ridge, and then north to Okakahana (36 miles), the elevation of which is considerably higher than that of

Okanwejo.

The outspan lies in a shallow basin, with rising ground north, east, and south. The saltpan is here a well-grassed plain about $2\frac{1}{2}$ miles wide, with a rise in the centre. Alongside the outspan are four pits containing a small supply of rain water of poor quality, augmented by a slight ooze in the rock. Sixty oxen and 50 persons proved a severe strain on the supply. It might be bettered by sinking, but would probably prove brackish. Rain tanks might be dug.

A small Herero village lies 3 miles north-west of the outspan. This is the furthest north these people are found, and the village is under the dominion of the Ovampos, who use the Hereros as scouts against the Germans.

A road runs from here to a salt lake 18 miles north, which furnishes the whole salt supply of the territory. The salt is excellent, and is conveyed hundreds of miles into the interior by natives, for trade purposes.

At a point 3 miles east of the outspan is an open space, whence signalling communication could be effected with the hills near Okanwejo.

Leaving Okakahana, the general direction of the road becomes north.

After a short ascent from the hollow, the road runs with a gentle rising gradient through dense scrub to the 47th mile. It then descends into a very shallow open valley—giving evidence of floods.

At 48 miles Okahanja is reached.

This is merely a native water-pit belonging to Ovampo bushmen. The latter are truculent, and very jealous of the water, which is bad and scanty.

The direction continues north, the road rising very gradually. Along the eastern side is a low (20 feet) ridge, on which grows an exceedingly poisonous thorn bush with a smooth yellow bark. A scratch from this is serious. East of and parallel to the road runs a narrow depression, \(\frac{1}{4}\) mile across. Further to the east is a densely wooded ridge.

At 54 miles the depression east of the road opens out into a saltpan extending for miles, with timber along its north-eastern edge.

From the 67th mile the sand becomes very heavy, and the road enters dense scrub, which continues to Nohorongo (74 miles). This place is a vlei-like depression containing two water-pits east of the road. The water is excellent, and supply strong. A "vlei" (about $2\frac{1}{2}$ miles by 1 mile) with high banks lies about 3 miles north-west on rising ground. It is said to fill in the wet

K

season, and retain water during April, May, and June. The water in the pits possibly comes from this source.

Only two bushmen scouts live here.

Leaving Nohorongo, the road takes a north-easterly direction, and rises gradually through heavy sand and sparse scrub, which latter ceases at the 80th mile. Open rolling grass downs then commence, which extend to near Koroka. A slight rise is crossed about the 90th mile. A chain of "vleis" (fresh water) lie north of the road. The road crosses a creek leading from them. This creek continues south-east. These "vleis" are full after storms, and abound with wild geese.

At 92 miles there is a chain of salt water lagoons to the N.N.E. with a watercourse leading from them, the banks of which are easy, and the bed firm.

The road continues at a gentle rising gradient, and crosses a sand ridge at 99 miles at a rather steeper slope.

Then the road descends gently for about 6 miles to a small water-pit (charged with gypsum) on the eastern edge of the road.

The road again rises gently to the 107th mile, and the country becomes open forest with grassy glades. Large trees 40 feet high and 3 feet diameter, with spreading branches commencing 12 feet above ground, are thickly dotted over the plain. Here and there palm trees are to be seen. Everywhere the natives (Ovampos) are busy cultivating. They do not live in villages, but each family occupies round pontocks (with thatched roofs) on its own patch of ground. Water in shallow pits is now abundant.

Heavy cultivation continues to Karoka (Kambonde's kraal), 114 miles.

At 117 miles is Olukonda. This place consists of a mission church, school, store, and missionary's house. Also a large unused store building—the property of the late Exel Erickson, who imbued the Ovampos with regard for the British, and the contrary for other nations. All these buildings are brick built with straw thatching.

drive principale (11.)

OKANWEJO (OKAUKWEJO) TO OLUKONDA.

(Alternative Route.)

General direction	n- eli	-	11500	-13	N.
Distance by road	-919	-10	at he	H-	90 miles.
C.					

Stages:-

(1)	Okandeka	-		-	14 miles.
-----	----------	---	--	---	-----------

(2)	Katumari				-	38	,,
-----	----------	--	--	--	---	----	----

- (3) Etiro - 50 ,,
- (4) Ekunga - 59 ,,
 - (5) Karoka - 87 ,,

At Karoka the two roads from Okanwejo to Olukonda join.

This is the shortest route to Ovampoland, but is only possible for small parties after the wet season, say during May.

The road is a good one. There is little heavy sand, and no severe gradients.

There are no hill ranges, but broken country between the 50th and 60th miles. Water is everywhere scarce. Long stretches occur where there is no firewood. Thousands of buck are seen.

Itinerary.

Leaving the north outspan at Okanwejo, this road runs north for 50 miles to Etiro. For the first 13 miles there is a gently rising gradient.

At the 1st mile the scrub recedes from the road, but runs parallel to it, and about 2 miles distant to the westward.

At mile 7 there is a belt of thorn bush 1 mile east of the road, behind which lies the Etosha Pan. From here to Katumari (38th mile) the country consists of rolling downs, heavily grassed and treeless, abounding with buck.

From the 13th mile a gentle descent leads to Okandeka (14 miles), where there is a small pit of brackish water in a swamp between the road and Etosha Pan, which is distant about ½ mile from the track. The radiation off the Pan is very great. Its banks are about 30 feet high.

Thence the road ascends gently over hard sandy marl, impassable in wet weather.

The prevailing winds are westerly, and the sand ridges run north and south. The road follows one of these depressions, thus restricting the view to 1 to 3 miles on either side.

Katumari is reached at 38 miles. Here there are three shallow pits on the eastern side of the road. Sparse scrub and sandy soil commences. The country becomes flat.

The scrub is dense and heavy for $2\frac{1}{2}$ miles, when it becomes sparser.

From the 47th mile the road descends into a small plain ½ mile wide, and after crossing a small rise descends very gently through sand and sparse scrub to a water-course 100 yards wide. The bed of the crossing is hard owing to salt in the soil. Below the crossing the banks are 50 feet high, but at the road they disappear. This is Etiro (50 miles). There are no pits, but the water in the watercourse is said to be fit to drink after rain; but when this place was visited only liquid salt was apparent.

After Etiro the road turns slightly west of north, and crosses a plain on which are small kopjes. A mile east of the road is heavy timber. A slight ascent follows, and sparse scrub commences.

At 53 miles the road again descends into another plain 1 mile wide, heavily timbered, 1 mile east of the road.

A heavy sandy rise commences at the 56th mile (gradient easy); the scrub becomes sparse, and then

ceases. Open rolling downs commence and extend to the 80th mile.

At the 59th mile Ekunga is reached. Two shallow pits on the western edge of road. A narrow belt of timber lies south-east, and 1 mile east are a series of pans (often dry) running south-east. Thence the country undulates, and rises gradually.

At 80 miles there is a shallow pit on the western edge of the road. About 2 miles to the west are pontocks (native huts) among palm and other trees.

The road now turns north-east, and crosses a nearly level plain abounding with grazing herds of cattle.

From mile 85 palms and other trees commence and continue to Karoka (87 miles).

The other road from Okanwejo joins here. (See Road Report No. 10.) A track branches off to the east.

(12.)

LÜDERITZ BAY TO KEETMANSHOOP.

"There is good enough anchorage at Lüderitz Bay, but the road from the harbour to Keetmanshoop is one of the hardest that it is possible to conceive. For the first 20 miles it passes near the ocean through a shifting sandbelt, where a night of south-westerly gale will throw up a moving sand dune 15 to 20 feet high. This affords no footing for transport animals, and necessitates quadruple teams or the reduction of the goods to a quarter of their bulk, and the making of the trip over and over again.* After the sandbelt the road rises, giving animals a stiff uphill pull. It then goes over a dry plateau, where eggs could be fried on the rocks, and reaches Aos (Aus), a distance of some 50 miles further on, at an altitude

^{*} The first water is said to be at Ugama, about 25 miles from Lüderitz Bay. The supply is scanty, and the water is dirty and somewhat salt.

of 4,200 feet.* From this point the road sinks, and the veld is excellent in places for 60 miles as far as Kobis (Kuibis), the altitude of which is 2,400 feet. The road next rises sharply over wretched country to Ganab (Kanas), 18 miles away, at a height of 3,000 feet. It again sinks to Narab, whose altitude is 2,500 feet, 30 miles distant, finally rising to Keetmanshoop, 45 miles further on, at an altitude of 3,100 feet. The total distance from Lüderitz Bay to Keetmanshoop is thus 223 miles. On no part of the journey is there an enviable or easy stretch of transport road. Even on the down-hill movement from Aos to Kobis the oxen, three-quarters of the time, are compelled to pull their hardest."

(13.)

RAILWAY ITINERARY.

SWAKOPMUND TO WINDHOEK.

Swakopmund.—Large brick station, running sheds, small workshops, goods shed, and platform with one hand-crane. The water supply, which is the same as that used in the town, is plentiful, but contains lime.

Branches of the railway run through the town and down to the mole and customs sheds. The Military Authorities have a goods shed of their own at the back of the barracks.

On leaving Swakopmund the railway crosses a level plain of heavy sand, and at $3\frac{1}{2}$ kilometres (2 miles) crosses a low ridge, after which some outcrops of rock are seen and the loose sand gradually gives place to the decomposed granite forming the Namieb, which makes good going for wagons and horses. At 10 kilometres (6.2 miles), Nonidas, in the bed of the Swakop River, is reached.

^{*} Before reaching Aus the road bifurcates, the southern branch going through Kubub and rejoining the northern road some 10 miles further on.

[†] For further information see page 41 et seq.

Nonidas.—Kilometre 10. The station is a four-Dist. Miles roomed hut, and there is a small hotel to the south of the line. At Nonidas there used formerly to be a Government horse depôt, and before the railway was built transport wagons used to remain here while waiting for stores from Walfisch Bay or Swakopmund.

Good grazing is found in the river bed, and water is plentiful.

After leaving Nonidas the line follows the course of the Swakop till Richthofen is reached.

Richthofen.—Kilometre 20. There is a small station building with three 400-gallon tanks on a stand, and a small supply of coal. In the Swakop bed there are good wells worked by horse power. Sandhills bound the river on the southern bank as far as Nonidas, but from Nonidas onwards the southern bank is composed of rugged and broken rocky hills, and is generally considerably higher than the northern, from which the country rises in an even slope towards the Colquhoun Mountains.

After passing Richthofen the railway leaves the bed of the Swakop and runs north along a wide nullah, climbing by steep gradients to the level of the Namieb. This nullah is in most places 50 to 100 yards wide with rocky sides usually 40 to 50 feet high.

Rossing, the next station, is situated to the east of, and a couple of miles from, the Colquhoun Mountains.

Rossing.—Kilometre 40. There is a recently-made 12.4 24.8 well, but the water, which stands at a depth of 30 feet, is very limited in quantity. Beside the line are three 400-gallon tanks filled with water brought in tank-trucks from Richthofen or Khan River.

On leaving Rossing the railway rises for some 5 kilometres (3·1 miles) before beginning the drop down to the Khan River. The Namieb here is a firm, undulating plain, broken by rocky ridges and outcrops. There is always a certain amount of grazing to be found, and after rain it is covered with good grass, but there is no water except in the rainy season, and for a short time after, when it stands in pools on the rocks.

6.2 12.4

The country on each side of the Khan River stands about the same level, and the river runs through a narrow rocky gorge 600 feet below this level. To descend to the river the railway follows the bed of a tributary stream which finds its way down from the plateau in a ravine some 50 yards wide bounded by high precipitous rocks.

Dist. Miles Inter. Total 11.2 36

Khan River. - Kilometre 58. On reaching the bed of the Khan River the railway runs up it for 2 kilometres (1.2 miles), till Khan River Station is reached, lying at the mouth of another ravine, by means of which the ascent to Welwitsch is made. The rails are laid on the sandy bed of the river, and the station house, engine sheds, etc., are also built in the river bed.

Since the completion of the railway there has been no heavy rain in this part of the country, but the Khan River sometimes comes down in a flood 20 feet deep, and the next time this happens all buildings, etc., at Khan River will be swept away. The Germans cousider, however, that the line will be easily remade and the interruption to traffic only temporary, while it is impossible to cross the Khan in the lower part of its course below Ketmanumps in any other way.

At Khan River there are the usual small station huts, and also running sheds and houses for employés. There is a large well worked by an oil engine and a large reservoir, and 10 tanks are erected for the filling of tanktrucks and engines. This water is slightly brackish, and does much damage to the engines. There was a considerable quantity of spare rails, etc., stored here in July 1903, and also a good supply of coal briquettes, possibly 100 tons.

On leaving Khan River Station the railway ascends by the steepest gradient on the whole line (1 in 20 for $2\frac{1}{2}$ miles), through a gorge to Welwitsch.

3 39.

Welwitsch.—Kilometre 63. Consists of a small station house with tanks filled from the Khan River, and lies on an open plain of firm sand commanding an extensive view. Across this plain the railway runs in an easterly direction to Pforte, situated at the bottom

of a spur running north from a high range of mountains bounding the plain to the south.

Pforte.—Kilometre 84.5. Consists merely of a hut, Dist. Miles and a little coal is stored, but there is no well. The spur later. Total is crossed at a nek by means of one zig-zag, and the line runs across a plain to Jakalswater.

station, and goods trains stop here for the night. There is a substantial station house, containing a restaurant, police house, engine sheds, and goods sheds. A considerable quantity of spare railway material is stored here, amounting to 1½ miles of permanent way, with spare points, curves, etc. There is no well at Jakalswater, but a branch of the railway 6 kilometres (3¼ miles) long runs down to the south where there is a small quantity of water. Jakalswater stands in the middle of a bare plain which slopes towards the Swakop River on the south and south-east and rises towards the Khuos Mountains to the northward. The ridge near Pforte bounds the view towards the west, and a few isolated kopjes break the plain on the eastern side.

This plain used formerly to be covered with luxuriant grass, but owing to the absence of rain in recent years there is now practically nothing to be seen but bare sand. The roots of the grass, however, remain, and as soon as good rains fall it will spring up again.

All the country traversed by the railway as far as Karibib appears to be uninhabited, and no natives are seen except those employed on the maintenance of the line. In one or two places, however, such as Ubib near Kubas, and along the Swakop River, there are native villages, and there are a few wandering tribes of Hottentots, bushmen, or Bergdamaras living by hunting in the desert coast region, which affords sustenance to a considerable number of gemsbok, koodoo, springbok, and other antelopes. Between Jakalswater and Sphinx the railway runs a little east of north, ascending steadily by easy gradients.

Sphinx.—Kilometre 121. Consists merely of one small 13.5 75. house, and is waterless. It lies among kopjes on the water-

shed between the Dorst River and the stream flowing south to the Swakop, and takes its name from a curious formation in a kopje 2 miles to the north. Soon after leaving Sphinx Station a fine view is obtained of the Dorst River valley with the long ridge of the Khuos Mountains on the left extending unbroken as far as Kubas.

Here the country materially improves, the bare sandy plains are left behind, and the ground, though stony and broken, is covered with small scrub, and the watercourses are marked by a line of thorn bushes with an occasional acacia tree.

Dist. Miles Dorst River.—Kilometre 134. Situated on the north bank of the river bed, some 20 yards wide at this point. The station house here, in common with the majority on the line, is built of compressed cork on an iron framework. There is a well in the bed of the Dorst River, from which water is pumped by hand labour into a small reservoir beside the station. The well is estimated to yield 3,000 gallons a day. The line ascends gradually to Kubas across a stretch of country sparsely covered with thorn scrub, and an extensive view is obtained towards the east down the Dorst River valley, and the line of the Swakop can be easily distinguished, bounded on the south by high mountains. On the west the Khuos Mountains run nearly parallel to the railway, curving to the east beyond Kubas Station. There are two gaps in the range, one a well-defined nek opposite kilometre 143 (89 miles), towards which several roads, which cross the railway between Dorst River and Kubas, appear to lead, and the other the pass of Kubas, through which the railway runs.

8.6

91.6 Kubas.—Kilometre 147.6. The station is a solid stone building, but the water supply is exceedingly limited. After leaving Kubas the railway climbs up through the pass of Kubas, between high rocky hills, and at kilometre 153 (95 miles), 3 miles beyond Kubas, the line is almost on the watershed between the Khan and the Swakop Rivers. The country is thickly covered with thorn scrub 12 feet high, acacia trees, and good grass.

Between the Khuos Mountains and the hills on the west of Ababis there is an open plain 3 miles wide

stretching past Ubib to the Khan River, 8 miles distant. The river here does not run in a deep gorge as at Khan River Station, but lies almost on a level with the surrounding country and is easily crossed by wagons.

This plain has considerable strategic importance, as a flank movement by the old transport road from Rossing would cross the Khan and strike the railway here.

From this point to within 4 kilometres (2.4 miles) of Habis the railway runs along the western foot of a precipitous range of hills, of which the highest peak, Otjipatera, a point of rock rising sheer for some 500 feet above the surrounding mountains, forms a conspicuous landmark for many miles around. In these mountains gold has been worked to some extent, but has always proved disappointing. On the eastern side there are rich marble deposits, which will probably be valuable in days to come.

Ababis.—Kilometre 165.9. Has only a small station Dist. Miles house, but there is a good well worked by horse power. Inter. Total At about kilometre 175 (108.7 miles) the line turns to the east, crosses a nek and enters the Habis valley, down which it runs, till at about kilometre 184 (mile 114) the Karibib Flats are reached. These flats, which extend for miles around Karibib, are covered with good grass, and are bare of scrub except along the water-courses. Several rocky ridges extend from the surrounding hills on to these flats, and some isolated kopjes rise abruptly out of the level, one especially noteworthy mass of rock, standing up precipitously 1,000 feet high above the plain, being passed some 5 kilometres (3.1 miles) before reaching Karibib.

Karibib.—Kilometre 194.5. This is one of the most 17.3 120.7 important towns in German South-West Africa.

From it starts the main road to Omaruru, Outjo, and all the Northern Districts, and stores for these districts are unloaded from the railway here and forwarded by ox-wagon; here also are the chief railway workshops.

The station is a large brick building very like that at Swakopmund. There are large goods sheds with a platform and hand-crane, and extensive sidings.

The railway workshops lie in an enclosure to the east of the station. There is a small foundry and some well equipped repairing shops with steam-driven lathes, etc.

These shops seem to be kept constantly busy at repairs to rolling stock.

The workshops are lit by electric light, and the station also fitted with electric lamps, but these latter on the score of expense are only lit on the arrival of a passenger train. This electric light is generated by means of a 16-h.p. horizontal engine and dynamo in the workshop enclosure; this dynamo is also used to work electric pumping machinery at two of the wells.

For water supply and description of the town, see page 34.

After leaving Karibib, the railway runs almost due east as far as Okahandya. At first the country is level and open, with a line of hills from 1 to 2 miles distant, on the south side. Near Otjimukuka the watershed between the Khan and the Swakop Rivers is passed, and the country begins to drain to the southward and becomes undulating and more thickly covered with scrub. Between Okasise and Waldau many small streams are crossed, the country is more broken and appears to be much more fertile and less stony, but the only sign of cultivation seen from the line is one small farm near Okasise.

From Waldau onwards to Okahandya the bush is 12 to 15 feet high, interspersed with large trees, and there is good grass everywhere, while a good many buck, hare, guinea fowl, and partridge are seen.

The stations on the section Karibib-Okahandya re:-

Dist. Miles are:—
Inter. Total

9.1 129.8

Ohatjimukojo.—Kilometre 209. Small house, well
with hand-pump.

6.2 136. Otjimukoka.—Kilometre 219. Small house, two wells 30 to 40 feet deep worked by horse-gear, four 400-gallon tanks on stand.

14.9 150.9 Kamumbonde.—Kilometre 243. Small house, one deep well with horse-gear.

Okasise.—Kilometre 262. Small house, well Dist. Miles 40 feet deep with hand-pump, five 400-gallon tanks. 11.8 162.7

Kamukoto.-Kilomotre 276. Small hut.

8.6 171.3

8.7 180.

Waldau (Kapenusea).-Kilometre 290. Large station house with restaurant, two substantial houses for station officials, goods shed and platform, small engine shed, two wells 40 to 50 feet deep, one hand-

power, the other worked by an oil engine.

Spare railway material amounting to about 2 miles of permanent way, complete with spare points, curves, etc.

Goods trains spend the night here, the third one out from Swakopmund. One mile south-east of the station there is a farm belonging to a German named Hein, and most of the land in the neighbourhood is taken up as stock farms by Germans or Boers.

From here a road runs through Okumbahe and Okumpepera (both farms belonging to Mr. Wecke, of the German firm Wecke and Voigts) to Omaruru.

Okahandya.--Kilometre 311. A large railway sta- 13. 193 tion is now being built of red brick, and there is a small goods shed, but there are very small sidings and no stores of railway material.

For description of Okahandya town, see p. 30.

From Okahandya the line runs nearly due south among large acacia trees. Four kilometres away from the town the Swakop River is crossed by means of a lattice girder bridge,* after which the line runs through thick bush and scrub past Swakop Station, where there is a 4.7 197.7 good well and the trains stop for water, till at kilometre 319 the second bridge * is approached by means of a long embankment.

The Swakop River here does not run every year, and at most for only one or two months, and as a temporary measure the rails could be laid on the sand of the river

^{*} See sketches, p. 44.

bed, but there is plenty of timber growing along the banks to repair these bridges if destroyed.

From here the line runs, at the western foot of a long range of mountains, through level well grassed country dotted with acacia trees and with scanty thorn scrub.

Dist. Miles The stations passed are :-

10.3 208. Teufelsbach.—Kilometre 335.

6.7 214.7 Otjihavera River.—Kilometre 346.

5.7 220.4 Okapuka.—Kilometre 355.

6.9 227.3 Brakwater—Kilometre 366.

At each of which there is a small hut, with a good well and some coal and wood fuel stored, and finally the terminus—

9.7 237.

Windhoek-is reached at kilometre 382.

The station buildings at Windhoek consist of a small corrugated iron office, running shed and goods shed with the usual small platform and hand-crane, but I believe a substantial brick building is to be begun shortly.

The railway water supply at Windhoek comes from springs, the water of which is distributed in pipes over the town.

A continuation of the railway runs down the main street of Windhoek and into the military store shed and artillery barracks; total length about 2 miles.

For description of Windhoek town see page 28.

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
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
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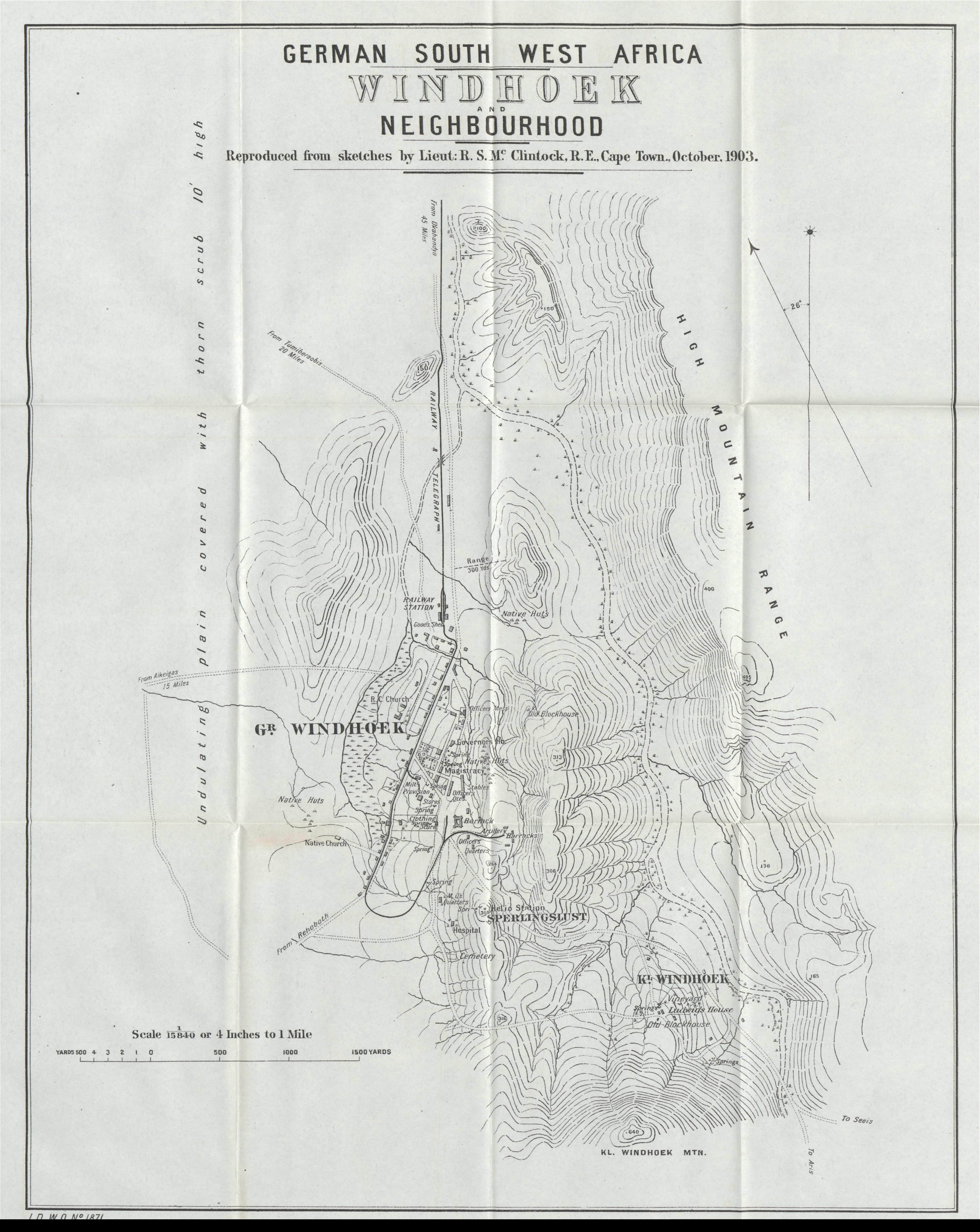
APPENDIX VI.

LIST OF PRINCIPAL AUTHORITIES CONSULTED.

LILUI OL LIULIOLE I					
"Deutschlands Kolonien"	Rochus Schmidt.				
"Organisatorische Bestimmungen für die Kaiserlichen Schutztruppen"	Official.				
"Mit Schwert und Pflug in Deutsch-					
Südwest-Afrika"	K. Schwabe.				
	H. von François.				
	C. von François.				
"Unsere Kolonien"	Dr. F. Martin.				
"Die Bahn Swakopmund-Windhoek"	Gerding.				
"Landungsverhältnisse an der Küste					
Deutsch-Südwest-Afrika"	Ortloff.				
"Colonial Army Systems"	War Department, U.S.A.				
"The Colonization of Africa" -	Johnston.				
"Report on German Colonies,					
1900-01"	F.O.A.S., No. 2790.				
"Report on German South-West					
Africa"	Lieut. R. S. McClintock, R.E. 1903.				
"Notes"	Lieut Colonel Laffan, R.E.				
"Jahresberichts," 1900-03	German, Official.				
"Deutsches Kolonial-Blatt," "Deutsche-Kolonialzeitung," and various magazines and papers.					



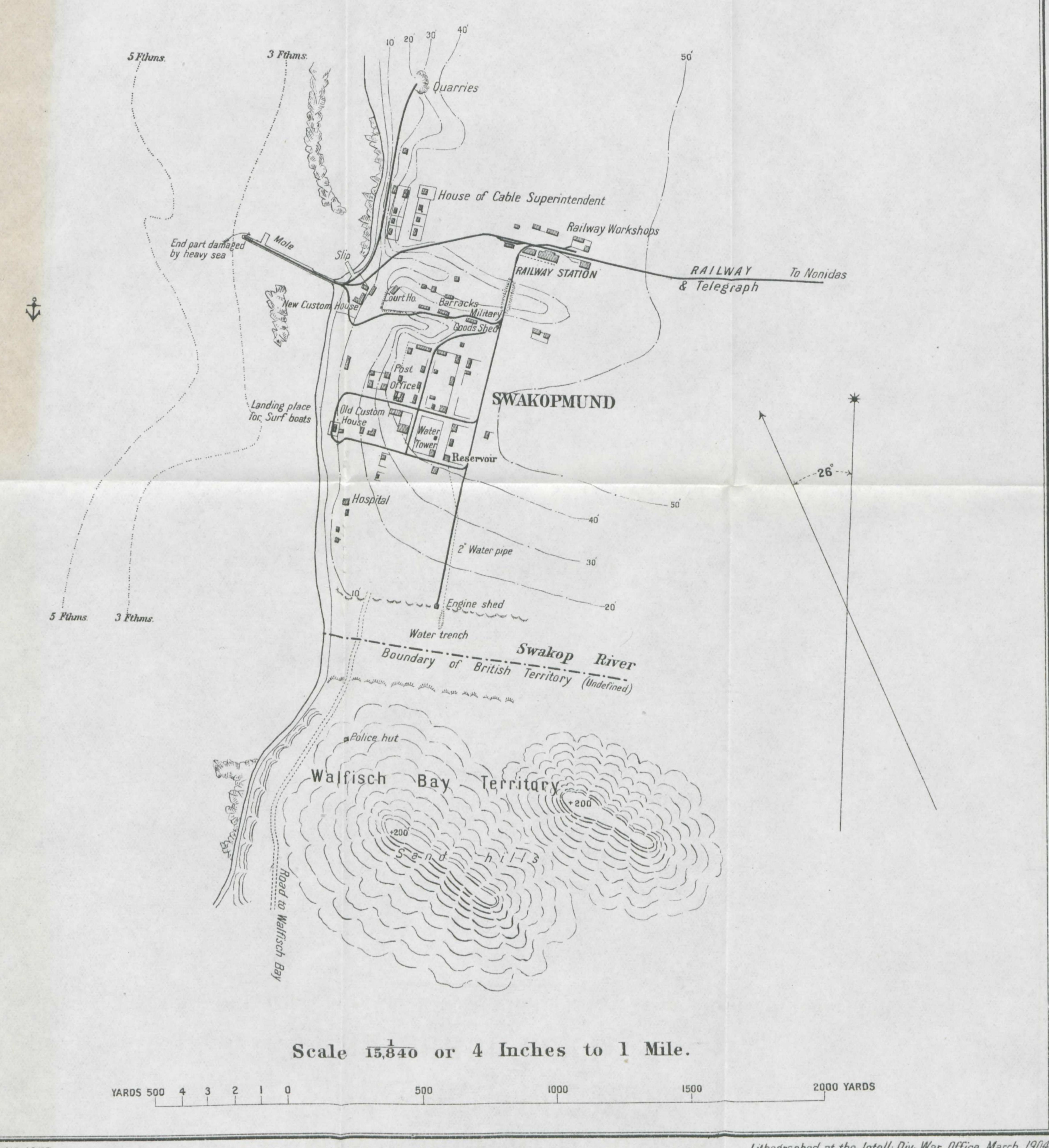




GERMAN SOUTH WEST AFRICA

SWAMOPMUND NEIGHBOURHOOD

Reproduced from sketches by Lieut: R. S. M. Clintock, R. E., Cape Town. October 1903.



Military Report on German South-West Africa. June 1904. TS Selected Foreign Office Files on Africa. The National Archives (Kew, United Kingdom). Nineteenth Century Collections Online. Web. 27 Sept. 2015.

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